

The international plastic modelling monthly

£1.25



AIRFIX

magazine

VOLUME 1 NUMBER 10 JUNE 1989

RAF SABRES

GIs IN 'NAM

LEOPARD 2 TANK

YAMAHA YZR500





Retired and clothed in a civilian colour scheme, this F-86F's aviation career continues.

J.P. Wood

Straight from the box: The Heller F-86F	436
RAF Sabres: Between the Meteor and the Hunter	440
Kitography: The North American Sabre	446
Accent on armour: The Leopard 2 tank	452
Handy tip: Photo-etched brass	458
Tamiya Yamaha: The YZR 500	460
GIs in 'Nam: Figure painting	464
Back to basics: Knives and files	466
Airfix, a recollection: The first 17 years	468
The 'O' Group: Phil Greenwood's armour coloum	473
Kit comment: Special new Verlinden products	476

JUNE 1989

JUNE 1989

Distributed to the news trade by SM Magazine Distribution Ltd, 6 Leigham Court Road, Streatham, London SW16 2PG. Telephone: 01-677 8111. North American hobby shop distribution through 8洲 Deen Books Ltd, 166-41 Powells Cove Boulevard, Whitestone, New York 11357, USA. Telephone: (212) 767 6632.

STRAIGHT FROM THE BOX



HELLER'S 1:72nd SCALE F-86F

IT is somewhat difficult for an enthusiast of my tasty vintage to view the Sabre as an historical aircraft, but that is exactly what it is. I am even more reluctant to accept that there are many more jet types, including many others that I flew on active service with the USAF that still seem quite modern and up to date to me, are also in this category. Perhaps I too, as a former pilot, may be considered to be historical. While I was in the USAF, the Sabre was used primarily in the training role while other smaller air forces had them in front line service. Enthusiasts in this country may never see one fly again but there are some still flying in other parts of the world, mostly in the USA where the US Navy still uses the type as a drone aircraft and also some very well-heeled private owners keep a small number of them in flying condition.

The history of the Sabre has been well documented so for

those who are not aware of the origin of this remarkable warplane I shall give a brief run-down of some of the salient facts. Not only was the Sabre the first production swept wing fighter in the world, but it was the very first to fly supersonic. While it was not capable of this feat in level flight, all that was

required for it to achieve this speed was a dive.

The P-86, as it was originally designated, was conceived early in 1945 and was at that time to be little more than a jet powered Mustang. Some courageous decisions were taken by North American with the USAAF based on early Ger-

man wind tunnel research and the resulting design evolved into the classic appearance of what we all know as the Sabre. If you are curious to visualise just what a straight winged Sabre might have looked like, simply have a look at photographs of the US Navy's contemporary fighter, the FJ-1



Above: Two 'hard wing' F-86Fs over Korea in 1953. (Colonel Jim Carter). Right: Fifteen years later, the F-86Fs were still serving with the JSDAF. Note the extended slats. (C.O. Wadd).



Above: A rare photograph of an early F-86H in service with the Massachusetts Air Guard. Note the six .50 calibre gun ports. The 'H' model later had four 20 mm cannon installed

(Author). Below: A full view of the F-86Fs on the cover repeated to show off the colourful tail markings of the Squadron Commander's aircraft. (Colonel Jim Carter)



Fury. The FJ-1 was probably a trifle more portly than a straight winged Sabre would have been as the Navy's Fury required a somewhat higher cockpit height for better pilot visibility during carrier landings. Both aircraft were initially powered by the J-35 axial flow jet engine though the production Sabres were equipped with the more advanced J-47.

SERVICE

The F-86A was quick to achieve acceptance among USAF pilots and it wasn't long after the beginning of the Korean War that it was to begin its successful combat debut. One of the inevitable consequences of the tragedy of war is the unavoidable improvements of the weapons used and the Sabre was no exception to this axiom. While its primary opponent during this political conflict, the MiG-15, possessed some superior performance characteristics, the combination of an overall better design, sturdily constructed airframe and a better breed of pilot ultimately gave the Sabre a 15 to one 'kill' advantage before the cessation of hostilities. During this veritable 'turkey shoot' the Sabre went through a succession of modifications that finished up with the 'F' model which was the most produced version.

After the war, the lessons learned resulted in the development of the ultimate Sabre, the F-86H, which bore only a superficial resemblance to the original F-86As as it was an almost totally new design. North American Aviation also incorporated the lessons learned in Korea into the design of the first of the new 'century series' fighters, the F-100 Super Sabre.

FOREIGN SABRES

The success of the Sabre was such that it saw service in virtually every nation in the free world and also curiously in

the air arm of the communist governed Yugoslavia. It was manufactured in Canada, Australia, Italy and Japan as well as the USA. It is not without some irony that the Sabre also served with the RAF while the British were attempting to develop their own front line swept wing fighter, the Hawker Hunter. The enemy fighter that forced the UK to hurriedly equip the RAF with Canadian built Sabres, the now ubiquitous MiG-15, was powered by a copy of a British designed Rolls-Royce engine that was rather injudiciously sold to the Soviet Union following World War 2.

While the last of the Sabres have now been replaced by more sophisticated fighters, some, as mentioned above, are still flying in private hands. The Sabre, in spite of its once revolutionary design, was a true 'pilot's aeroplane' with hardly any nasty handling characteristics. It was docile and easy to fly and any aviator who had the good fortune to tie his bum to one will always have fond memories of the type, even, I suspect, pilots of the RAF.

THE KIT

Heller's 1:72nd scale F-86F kit should be showing its age by now as it is over ten years old, but it simply refuses to do so. It is a rare item in the hobby shops these days, it is a genuine bargain. The kit is accurate, well detailed and the fit is no less than superb, also it only costs £2.25. Add to that, it contains colourful decals for three aircraft. There is simply no other similar kit now on the shelves that offers the enthusiast all these advantages at such a minimum cost these days and if you do have the desire to model post war jet aircraft, then this kit can provide you with hours of building and painting enjoyment. Accessories in the shape of decals and references abound, so this kit is a natural for a mini-theme collection.

CONSTRUCTION



Stage 1

The instruction sheet outlines the assembly of the Sabre in three written steps and while the construction is essentially very simple, these stages should assist the newer modeller in a trouble-free completion of this kit. The first thing to do is assemble the neat little cockpit. All the essentials are included and the only additional work required is to paint whatever details that you desire to include at this time. The tiny Weber ejection seat is in three separate pieces and is quite good as it needs no extra work. Be sure to paint the instruments on the panel before installation. Add the nose wheel well, intake and the exhaust to the inside of the one fuselage half at this time. If you desire your model to sit on the nose wheel, add some weight as well.



Stage 2

I chose this time to complete the few sub-assemblies that were required such as the external fuel tanks and the wings. Note that a choice of two types of tank are offered. Check photographs of the real thing to determine which type that you desire to include, if any. Most pilots would select none if offered the choice as they detract from the handling and the performance. Glue the fuselage halves together and set aside to dry.



Stage 3

Add the wing assembly and tailplanes at this time. The tailplanes on the F-86F had a pronounced dihedral angle and the locating pins assist you in maintaining this angle, but while they are drying, ensure that they do not sag.



Stage 4

Now is the time to add the undercarriage bits and doors. Check that the main gear legs are on the correct side even though the locating pins should prevent an error. The doors can be secured either open or closed though on the real aircraft, after the aircraft had been parked for a while, the hydraulic pressure that holds the doors closed would 'bleed down' to zero and the doors would slowly open. Another anomaly of most Sabre kits and this Heller version is no exception, is that these aircraft were equipped with leading edge slats. When not in flight, these were almost always extended as they were spring loaded to the open position. I say almost always and this is a little tip that will get any 'expert' off your case, as some operational squadrons permanently wired the slats closed for operational reasons. If you can't be bothered to go through all the hassle to cut your wing apart to overcome this obstacle, just issue a squadron directive to your chief of maintenance to wire all the wing slats in your Sabre outfit permanently closed.



Stage 5

Add the tiny fuel drain pipe to the aft of the fuselage, the speed brakes in either the open or closed position as desired and the canopy to finish the assembly.



Above: A camouflaged Luftwaffe Sabre late in its service career. Below: Another Luftwaffe Sabre from the same squadron as the model.



Stage 6

Select one of the three schemes provided on the decal sheet and paint the aircraft as shown on the instructions. I chose the Bundes Luftwaffe scheme of the Richtofen Geschwader as it was very colourful, though the Norwegian Air Force and Colonel John Glenn's Korean War mount are also quite nice.



RAF SABRES

THE release by Hobbcraft of a Canadair Sabre Mk.6 (incorrectly sub-headed as an F-86F-10) with separate slat detail and Modeldecals' super Set No.97 containing 11 different RAF squadrons and two Wing Leaders markings, provided the necessary stimulus to fulfill a long held ambition to portray the Sabre in the markings of all the RAF user units. The earlier issue of No.234 Squadron in Set No.14 and No.20 Squadron in Set No.37, enables all the user squadrons except No.67 to be portrayed.

Despite the availability of the Heller kit, I have always balked at the work involved in portraying the slats in the open position. Happily, the Hobbcraft model avoids that work, though it does require the wing to be reduced in chord, that is I feel the easier option.

That the RAF even operated the Sabre resulted from that

most unhappy of occurrences — WAR. The performance of the Russian MiG-15 when it appeared in the Korean War outclassed all existing Western designs in service — except one — the North American F-86 Sabre. Recognising the need to fill the gap between the Vampire/Meteor and the delayed Hunter, the RAF placed a high priority on obtaining the Sabre. With the needs of the USAF and the Royal Canadian Air Force being met first, deliveries from Canadian production did not take place until October 1952, when the forerunners of 438 Canadair Sabre Mk.4s were delivered via Greenland and Iceland to the UK.

RAF DELIVERY

Equivalent to the North American F-86E, these were designated Sabre F.4 in RAF service.

They served with some 20 squadrons and units of the RAF, mainly in Germany, but also with Fighter Command in the UK. Three Sabre Mk.2s were loaned from the RCAF

and were designated F.1 by the RAF but were subsequently redesignated F.2 to conform with the Canadian mark numbers.

A study of only a few photo-

Above: Early RAF Sabres in formation, two in bare metal finish. Below: Hasegawa's 'Egg Plane' Sabre in RAF mufti.



JUNE 1989



The Heller F.4 with slats retracted (secured up).

with 6-3 hard and 39 ft 1 in slat wings. Deliveries to Europe included both wing types, with some aircraft (e.g. Norway) subsequently retrofitting the long span slat wing. Far East deliveries should have received 39 ft 1 in wings on conversion and would have been delivered as such.

THE KITS

Five models of the Sabre are currently available in 1:72nd scale, three from Fujimi (F-86F-25, F-40 and RF-86F), Heller (F-86F/Canadair Mk.6) and Hobbcraft (Canadair Mk.6/F-86F-10). Neither the Heller or the Hobbcraft kits accurately represent the F-86 versions claimed. Both 'hard' and 'slat' wing variants may be modelled from the available kits with varying degrees of modification.

There is also a large variation in cost, varying from £1.99 for the Heller to £6.99 for the Fujimi. It is possible that some modellers may have examples of the now unavailable Hasegawa/Frog Sabre which represented the 39 ft 1 in F-86F-40 variant and in comparison now shows its age.

RAF Sabres may be modelled from any of the available kits, however, modification to the wing is necessary in all cases bar the Fujimi F-86F-25 which represents a 6-3 hard wing. By modification and/or swapping wings between kits, every wing variant of the F-86 is possible. The chart summarises the methods

graphs shows RAF Sabres fitted with either slatted or non-slatted wings and that often both were to be found on squadrons at the same time. The existence of both wing types and the long held belief that Sabres were either F.1 or F.4, according to serial block and/or wing type, gave rise to a great deal of confusion, only resolved in recent years.

The different types of wing fitted to Sabres are the results of development to meet operational and/or handling requirements. The first Sabres had leading edge slats which gave excellent low speed handling, highly desirable when taking off and landing. The slats worked automatically being retained in the close position by air pressure, a feature that restricted the Sabre's manoeuvrability at altitude, when reduced air pressure would result in the slats deploying and creating drag or would deploy on one wing and not the other resulting in a very sudden flick roll — not necessarily what the pilot wanted at the time.

NEW WING

To overcome this feature, found to be undesirable under combat in Korea, manoeuvrability of the Sabre at high altitude and Mach numbers was improved — at the expense of the low speed handling qualities — by deleting the slats and installing a new leading edge that extended the wing root by six inches and the tip by three inches, with a short five

The Fujimi with the 6-3 'hard wing'.

JUNE 1989

inch high fence at 70 per cent span to correct airflow changes. This became known as the 6-3 wing, also referred to as the 'hard' wing. Span remained unchanged at 37 ft 1 in.

Sets of the 6-3 wing were despatched to Korea and fitted to a number of F-86E-10 and early 'F' models for combat testing. The 6-3 wing was subsequently introduced during production of the 171st F-86F-25 and the 200th F-86F-30 models. Installation of the 6-3 resulted in the new wing root extension overlapping the ammunition compartment doors, necessitating the integration of a removable triangular fairing. Subsequent wing developments resulted in a slatted 6-3 wing from Canadair (Sabre Mk.6) and an

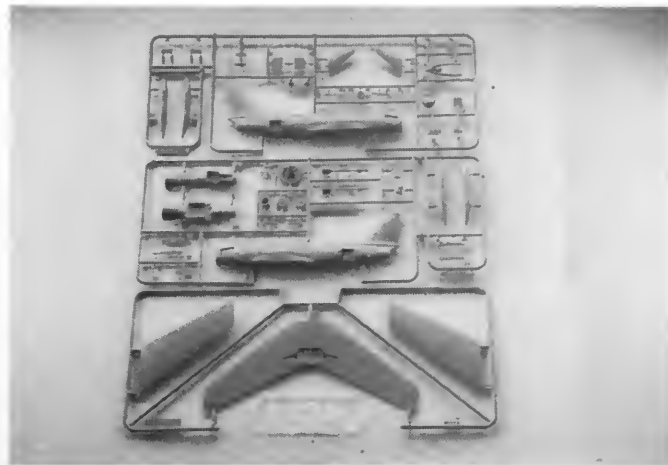
extended 39 ft 1 in 6-3 wing with and without slats from North American (F-86F-40, 'L' and 'H' models).

The bulk of RAF Sabres were delivered with the slatted 37 ft 1 in wing, however, modification to 6-3 hard wing coincided with deliveries to squadrons and continued throughout the period of service. The programme was never fully completed and both slatted and hard wing aircraft were to be found on the same squadron when Hunters began to replace them. The only positive evidence of modification or not is photographic.

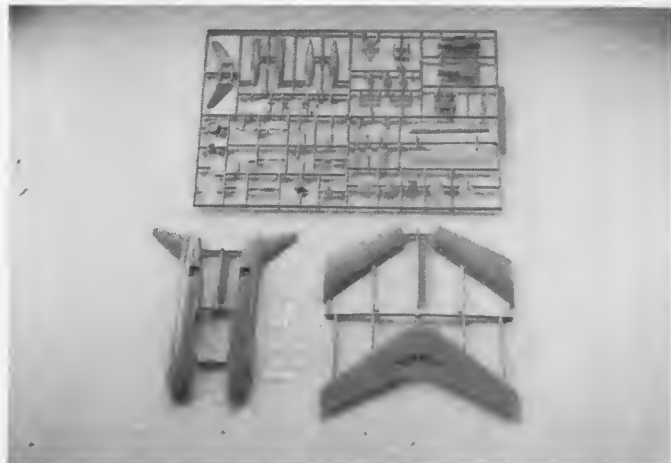
Table 1 shows the complexity of the wing/model combinations and is further complicated by retrofitting earlier 'F' models



AIRFIX MAGAZINE — PAGE 441



Above: Fujimi F-86F-40.
Below: Hobbycraft Mk.6 Sabre.



I chose, based on converting existing kit wings.

CONSTRUCTION

To avoid repetition, only points specific to a particular kit are noted, all common points are found under the general headings.

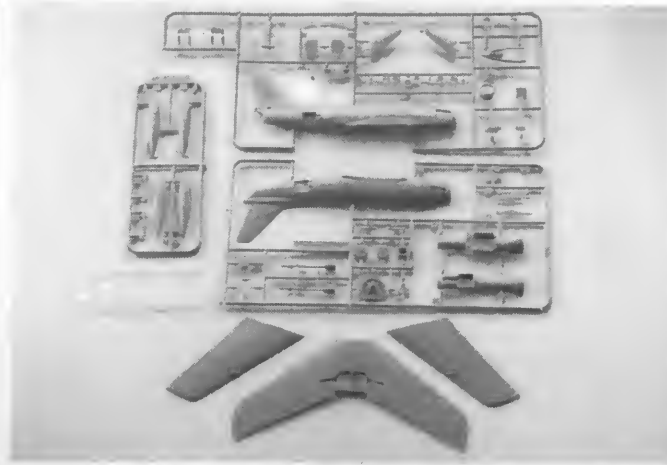
FUJIMI

This represents the 6-3 hard wing RAF version and may be built from the box. The intake on the starboard fuselage forward of the airbrake well should be deleted as it is not applicable to RAF machines. Separate gun port panels are provided, however, these while passable are really too short and shallow and would benefit from work with a file and drill. The earlier, narrow chord slat wing may be represented by deleting the wing fence and reducing the wing leading edge as described under Heller.

HELLER

Two versions are possible, however, both require modification of the existing kit wing.

The Hobbycraft Mk.6 Sabre with slats extended.



Fujimi F-86F-25.

dry and mark 2 mm at the wing root in from the leading edge. Similarly mark 1 mm in from the leading edge at the wing tip. Scribe a line joining these two points and remove the leading edge forward of that line. With a file reprofile the leading edge and rescribe new slat detail compensating for the reduction in the leading edge. When the wings are joined to the fuselage, alter the fuselage wing leading edge fairing to align with the new leading edge position. The nose undercarriage needs to be reduced by .5 mm to give a more nose down sit to a completed model.

HOBBYCRAFT

Though both early narrow chord slat and 6-3 hard wings may be produced from this kit, in my opinion, the most useful option is modification to the early slat wing version. The wing depicted in the kit is unique to the Canadair CL-13B Sabre Mk.6 — i.e. 37 ft 1 in span, 6-3 wing with slats.

The primary object is to retain the leading edge slat detail, therefore the chord of the wing needs to be reduced at other than the leading edge.

Do not join the wing halves. On both the upper and lower wings a scribed line is to be found running parallel to the slat detail. Using this as the forward cut point, mark points 2 mm at the wing root and 1 mm at the tip of and scribe a line joining those (dotted line on drawings C/D).

On the top halves of the wing, with a sharp blade, lightly rub down and repeatedly score the original line until the leading edge comes free. Repeat the exercise on the newly scribed lines. Turning to the lower wing, cut into the wing box at the root to the point where the new scribed line intersects. Repeat the exercise to release the leading edge. Photograph one shows on the left the unmodified wing with the area to be removed highlighted as a dark line, while the right side shows the removed leading edges.



The Hobbycraft Mk.6 with slats extended in RCAF markings.

the plastic gets very thin.

GENERAL

Except for modifications noted, construction followed the plans, except the main instrument panel was, in all cases left out until the fuselage halves were joined and dry to allow the placing of lead weight and plasticine in the nose. Care is necessary to ensure the nose pieces and the intake tunnels/cockpit baths are lined up.

A little filler was necessary on the windscreen joint of all three kits. The airbrakes should not be fitted per instructions, but a good dry fit obtained, held in place by blue tak if necessary, to ease painting and subsequent decal application. My personal preference is to fit the undercarriage *after* a model is finished — it saves having to repair broken legs etc and makes for easier masking when airbrushing. The latter also applies to the tailplane — masking and spraying is easier with them off.

PAINTING

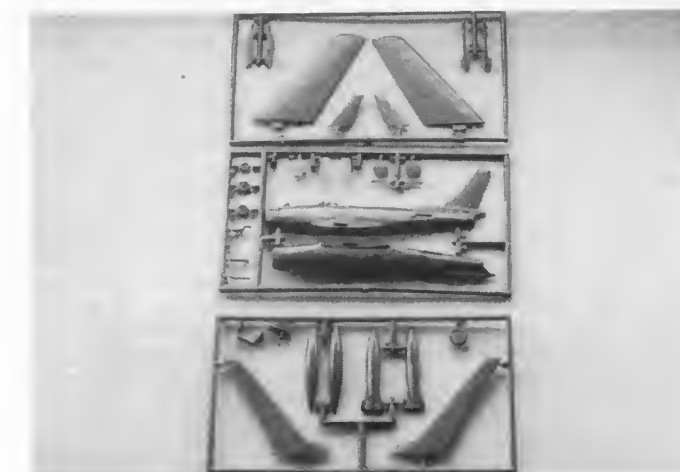
Cockpits, seats, instrument

To assist in joining the separated wing parts, glue two small sheets of plastic card to the leading edge parts and aligning at the wing root glue the parts, allow to dry, file wing tip to correct profile, lightly rub down and fill where necessary. Rescribe panel lines. Photograph two shows a modified lower wing with the right side

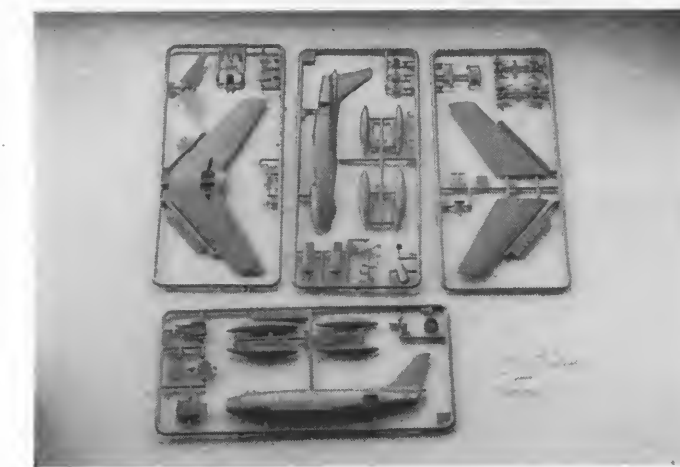
slat replaced — compare with the original below it. Also shown — at left, an original top wing, compared to a modified one at right. The white areas on the remaining wing section show the position of the plastic card supports.

The mid wing reduction of wing chord affects the depth of the wing and I found it

necessary to cut down the forward edge of the wing box to enable the wing to sit higher in the fuselage. Join the wing to the fuselage and cut back the fuselage wing leading edge fairing to the new wing position. It is strongly recommended that filler be applied to the inside of this fairing prior to joining the fuselage halves, as



Above: The Hasegawa F-86F-40 kit. Below: The Heller F-86F.



Above: The Matchbox F-86A. Below: The Airfix F-86D.





The Heller F.4 with retracted slats.

or three times to ensure a clean cut. Gently prise the airbrakes out of the well. To seal the finish apply a coat of semi-gloss varnish.

FINISHING

When the varnish has dried, remove any masking from the canopy and add undercarriage legs, doors, etc. To get the distinctive hang of the airbrakes, I cut off approximately 1 mm off the lower arm. Position the actuating ram in the well and the airbrake into the arm recesses and it will naturally adopt the desired position. Once both are in place, check to ensure both are at the same angles — adjust if necessary.

CONCLUSION

Some further work is needed to achieve my aim, however, this exercise showed the way — Heller kits for the 6-3 hard wing variant and Hobbycraft modified for the slat wing. I do consider the Fujimi kit somewhat expensive for what it provides. The Heller kit will also benefit from deleting and rescribing the existing raised panel lines. There is another kit available of the Sabre — the Hasegawa Eggshape. This I completed as an F.4 of No.112 Squadron — I am positive it was created in anticipation of Mike McEvoy's posting to the squadron — instead he went to fly Hunters. What a missed opportunity!

REFERENCES

Canadair Sabre, Aircam No.20; Canadair Sabre by Larry Milbury; Various IPMS Canada, UK and USA magazines; F-86 Sabre by M. Allward; F-86 in Colour by Squadron/Signal; F-86 in Action by Squadron/Signal; F-86A-L, Aircame No.17; F-86 Sabre, Koku-Fan Illustrated; F-86, Bunrin-Do Nos.39, 73 and 107.

M.D. Howley

panels and canopy combings were painted black (Humbrol 75) and when dry, detail highlighted with a light dry brushing of medium grey. Where supplied instrument panel decals were applied. Seat headrest is painted red and straps simulated from thin tape. The interior of undercarriage and airbrake wells were painted interior green (Humbrol HD5) and detail highlighted with dry brushed silver.

Undercarriage legs, wheel hubs, the inner faces of undercarriage doors and the airbrake actuating arms were all painted Humbrol matt aluminium and the oleo sections painted silver to provide a good contrast.

German based Sabres had PRU blue undersurfaces and

dark sea grey/dark green uppersurfaces with a matt black anti glare panel. UK based aircraft, except those transferred from Germany had aluminium undersurfaces with a lower demarcation line. Fin tips were light grey with black or brownish black aerial panels on the leading edge.

DECALS

A gloss surface is best for applying decals and a coat of model varnish or Johnsons 'Klear' acrylic floor polish is recommended. From Model-decal Set No.97 I chose Nos.3, 92 and 93 Squadrons and No.20 Squadron from set No.37. Roundels and serials were obtained from Modeldecal sets 46 and 47. Most of the decals are routine, however, care should be taken to get the serials lined up properly. Apply the fuselage roundels and the squadron bars over in the in-place airbrakes and allowed to dry. Run a sharp blade gently around the outline of the airbrakes to cut the decal — this may have to be done two



Above: The Hobbycraft wings. Below: The Hobbycraft wings being modified. Right: The Heller wings with those on top extended length.

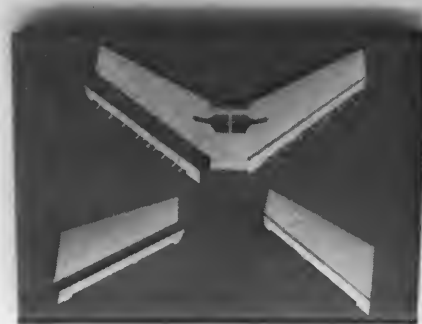


		TABLE 1			
Wing	Type	USAF	RCAF	RAF	Other
37 ft 1 in	Slats	F-86A F-86E	Mk.1 Mk.2	F.1/F.2	Greece and Turkey (Mk.2/F-86E(M))
37 ft 1 in	Slats	F-86E-10 F-86F F-86D	Mk.4	F.4	Italy, Yugoslavia (Mk.4/F-86E(M)) SAAF Denmark, Japan, Greece, Yugoslavia, Korea, Philippines, China (Republic), GAF, Italy, France, Norway, Netherlands, Venezuela
		F-86K			
37 ft 1 in	6-3 hard	F-86E-10(R) F-86F-10(R) F-86F-25 F-86F (Various)	Mk.5		GAF (Mk.5) Norway, Iran, Saudi Arabia, China (Rep), Pakistan, Argentina, Peru, Venezuela
37 ft 1 in	6-3 slats		Mk.6		GAF, SAAF, Iran, Columbia, Pakistan
39 ft 1 in	6-3 hard	F-86H-1			Spain, Portugal, Korea, Norway, Ethiopia, Thailand, Philippines
39 ft 1 in	6-3 slats	F-86F (Various)			Japan, China (Rep), Thailand
		F-86F-40 F-86L F-86H-10			

Note: The F-86E-10 model introduced a 'flat' windscreen in place of the 'V'-shaped one found on the 'A' and early 'E' models.

TABLE 2		
Variant	Kit	Modification
Mk.4 slat	Heller/ Fujimi	Reduce leading edge by 2 mm at root and 1 mm at tip, reprofile wing leading edge, rescribe slat detail.
	Hobbycraft	To retain existing slat detail, remove 2-1 mm section from centre of wing, per drawing A. Rejoin wing sections. Cut back fuselage leading edge fairing to new wing position.

Note: Readers may question why I have not attempted to use the wings from the Matchbox F-86A. The reason is preference. Either the Matchbox wing or that from the Airfix F-86D would provide the original slat wing. The kits used have a single piece lower wing and it would be necessary to cut out and attach the centre section and then mate the Matchbox (or Airfix) wings — not difficult but expensive!

Mk.4 hard	Fujimi	Use F-86F-25 kit — build as supplied.
6-3 wing	Heller	Fill in existing slat detail and add a 6 mm long 1.75 mm high fence at 58 mm from the leading edge wing root.
	Hobbycraft	Cut off slat supports, glue slat in place, fill gaps, add wing fence as above.

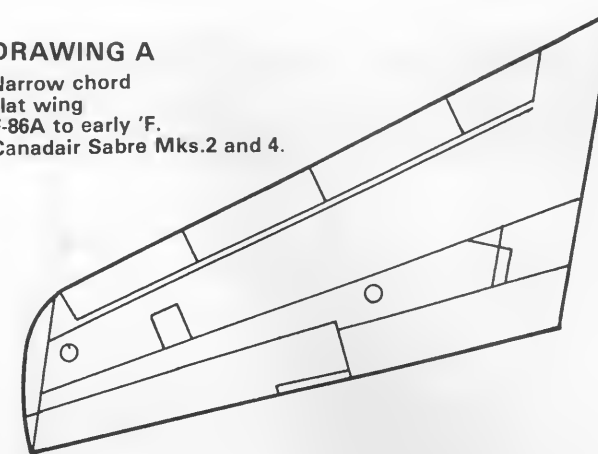


Above: A formation of RAF Sabres. Below: An RCAF Sabre showing the gun installation.



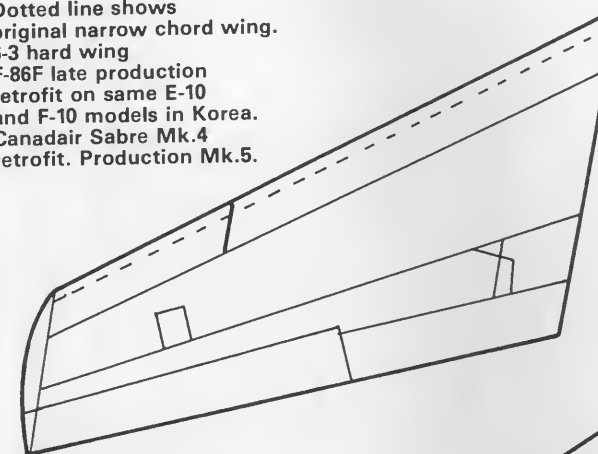
DRAWING A

Narrow chord slat wing
F-86A to early 'F'.
Canadair Sabre Mk.2 and 4.



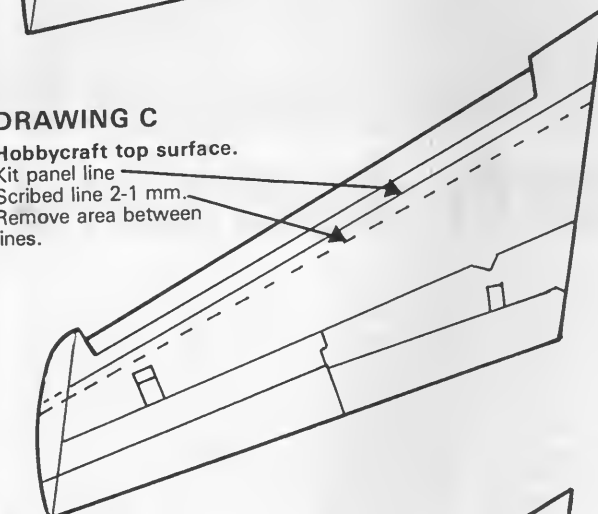
DRAWING B

Dotted line shows original narrow chord wing.
6-3 hard wing
F-86F late production retrofit on same E-10 and F-10 models in Korea.
Canadair Sabre Mk.4 retrofit. Production Mk.5.



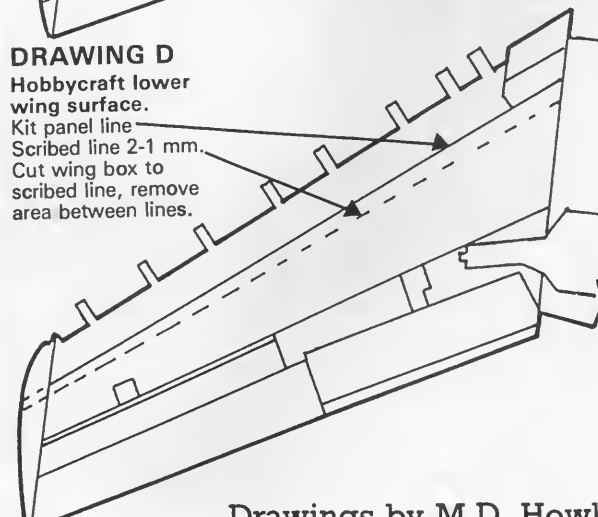
DRAWING C

Hobbycraft top surface.
Kit panel line
Scribed line 2-1 mm.
Remove area between lines.



DRAWING D

Hobbycraft lower wing surface.
Kit panel line
Scribed line 2-1 mm.
Cut wing box to scribed line, remove area between lines.



Drawings by M.D. Howley

KITOGRAPHY



North American F-86 SABRE

THE Sabre has the distinction of being the very first plastic kit that I ever purchased with my own money. My father had introduced me to plastic modelling previously, circa 1949, when he surprised my sister and me with a gift to each of us of the new-fangled Hawk 1:48th scale plastic kits, the Gee Bee racer and a Howard 'Ike'. My father built the Gee Bee for my sister and I was left to my own devices with the 'Ike'. I distinctly recall that we used Acetone solvent in the assembly, thereby implying that these pioneering efforts were injection moulded acetate rather than polystyrene plastic.

Later, in the early 1950s, when I was slightly more prosperous due to my paper round, I remember very well agonising over the decision to spend the then exorbitant amount of one dollar for the 'new' Lindberg 1:48th scale F-86A kit. Believe it or not, my feelings at that time were that the wooden kits, either the Monogram balsa or Strombecker pine

varieties, were considerably easier to build. I have since completed many Sabre kits in wood and plastic but none were nearly as troublesome as that one. Acetone did not serve me well as an adhesive as this Lindberg offering was made of the latest polystyrene plastic.

Heller's F-86F with Microscale decals applied.



Never mind just how I overcame the problem, suffice to say that the final results were less than satisfactory. I didn't return to plastic modelling for another ten years.

Plastic modelling has come a long way since then and in a way the Sabre kits represent

A 'hard wing' RAF Sabre used as an engine testbed by Rolls-Royce.

the progress of the hobby in no small way, beginning with the above mentioned Lindberg offering and culminating in the recent Hobbycraft 1:72nd scale kit. What follows is almost a capsule history of plastic modelling itself as the list of kits available of the Sabre began about the same time that the hobby began to be universally accepted.

SMALL SCALE KITS

Some of the first kits from Japan were in smaller scales that reflect the generally more modest size of the homes on that island nation.

Marusan, 1:100th scale F-86F. Marusan was one of the very first Japanese manufacturers and is no longer with us. Their 1:100th scale kit is now a collectors item and also appeared boxed by Fuji and UPC in the USA. Sadly, 1:100th scale has lost out to other scales and this practical sized type of modelling is no longer an option, though there are some devotees still about.





Fujimi's RF-86F in JSDAF markings.

Nichimo, 1:80th scale F-86F. I can remember seeing this one in the tiny hobby shops in Tokyo but its non-standard did not interest me. Neither did it seem to inspire the rest of the modelling world to create a new following.

Kleeware/ITC, 1:111th scale F-86D. Yes, it is a rather unusual scale and this kit was offered with a boxmate, a P-51D Mustang. I am not certain whether this kit originated in the UK or the USA, but it was available under both of the above mentioned labels.

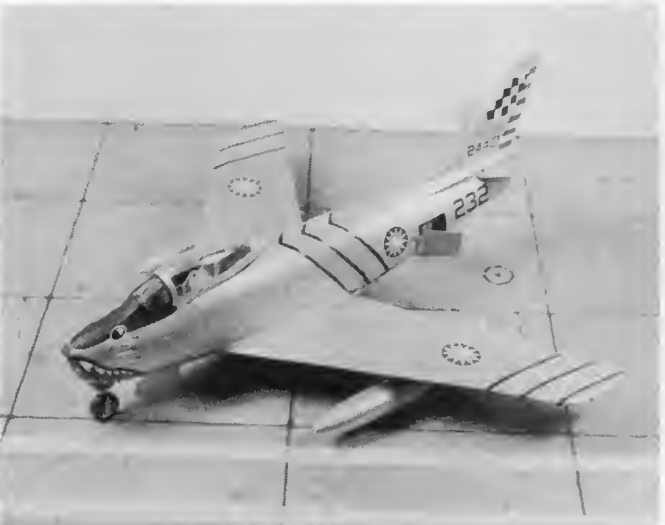
THE SCALE

By far the world's most popular scale, 1:72nd has by far the most entries in the Sabre ledger. It is possible to model virtually every production version of the Sabre in this scale with the products currently available.

Airfix, 1:72nd scale F-86D. This is a brilliant little kit of the interceptor version of the



Above: A camouflaged Heller Korean F-86F. Below: Heller's F-86F in Nationalist Chinese markings.



Above: The Heller with Canadian markings. Below: Another Heller with Italian Air Force markings.



A converted Hasegawa 'F' into an F-86H.

separate versions with appropriate changes to the decals and supplemental parts. The surface detailing, of the recessed variety, is superb. I am not convinced that the fuselage cross section is absolutely correct as it appears to be slightly portly. This feature is not a significant criticism as the model 'looks' right and apart from a rather high purchase price, the model is difficult to fault.

Hasegawa, 1:72nd scale F-86F. While this kit appears to be no longer available, it was the only one to offer the 6-3 'extended' wing. It was one of the very first Hasegawa 1:72nd scale kits and did reflect its age. It appeared in many different boxes from Japan as well as under the Frog label in the UK and the AMT label in the USA. This kit, due to its age, cannot be compared to the current batch of 1:72nd releases.

Heller, 1:72nd scale F-86F. When this kit first appeared almost ten years ago, it was a very welcome sight to my eyes as a Sabre fan. I still believe it to be the best Sabre bargain in the shops at the moment. See the *Straight from the Box* article in this issue for further comments.

Hobbycraft, 1:72nd scale Sabre Mk.6 (F-86F-10). The latest Sabre on the market is the only one to this scale that includes the leading edge slats as separate parts. It is a good kit and is mid-priced so those who wish to avoid cutting your Sabre wings into bits to display their model with the slats extended should go for this

Sabre. The Sabre-Dog, as it was known in the USAF had the bulbous radome added to the pointy end and an afterburner to the other. The former sleek appearance of the world's first swept wing fighter was altered to produce a most ungainly looking aircraft. The machine gun armament was replaced by a retractable tray of rockets beneath the nose. This was another of those misguided technological 'advances' that proved to be unworkable and is so often repeated that one wonders how on earth the military can be so gullible. The kit is the only 'Dog' model now available and is quite good. It can also be easily modified into a 'K' or 'L' version.

Frog, 1:72nd scale F-86E. This was the very first Sabre in this scale and while very basic was the only one available for quite some time. Typical of its generation, it had huge 'stove bolt' rivets all over its surfaces and the pilots head moulded integral with the fuselage. The oversized rivets were in vogue at the time, ironic, as the manufacturers of the Sabre had taken extreme measures to ensure that the real thing had an absolutely smooth surface for aerodynamic considerations. This kit also had lead weights included to keep the nosewheel on the ground. Today's kit producers should consider doing so as the idea was in advance of its time. This kit is no longer available.

Fujimi, 1:72nd scale F-86F, various sub-types. Not the very latest of the Sabre kits, but certainly among the best. The kit has been boxed in four

The Fujimi F-86F-25 in JSDAF markings.



A Heller with Pakistani Air Force markings.



The Heller in colourful Portuguese markings.

one.

Matchbox, 1:72nd scale F-86A. Well that says it, doesn't it. This is the only 'A' model currently for sale and is likely to be so until Fujimi decides to extend its present Sabre line-up. It is a typical earlier Matchbox offering which excels in the area of simplicity and fit while lacking the sophistication of contemporary kits. Its primary advantage is in the inclusion of the 'split' wind-screen unique to the F-86A. This is a competent kit and recommended for beginners.

THE LARGER SCALE KITS

The two 'other' scales, 1:48th (1.50th) and 1:32nd are not as well catered for as 1:72nd, but the kits now obtainable are quite good.

Aurora, 1:48th scale F-86D. Aurora is no longer in business and their pioneering plastic kits were best described as toys rather than scale models. This was one of their earlier and therefore less accurate efforts.

Esci/Ertl, 1:48th scale F-86F. The Italian Air Force operated Sabres and therefore this was a logical choice for this firm's home market. It is a good kit and is available in several issues based on the same mouldings with different box art and decals included.

Lindberg, 1:48th scale F-86A, F-86E and F-86D. Lindberg kits have been around for a long time and their products continue to appear in newer boxes from time to time. This is pretty much a matter of 'old wine in new skins', so have a look at the



Another Heller Iberian F-86F with Spanish roundels.

kits before committing yourself to a purchase.

Marusan, 1:50th scale F-86D. This no longer available kit was a landmark kit at the time of its release in the early 1960s. This was the case as it was an early attempt to be a 'high tech' effort that included a separate engine and many other refinements that are considered to be standard today. It was also issued in the USA under the MPC label.

Monogram, 1:48th scale F-86F. It is suitable that this renowned US company makes what is probably the best Sabre kit in this scale. The kit is all that we have come to expect from the oldest and most respected plastic modelling firm in the USA. Highly recommended for those who like their modelling pleasure just that bit larger.

Hasegawa, 1:32nd scale F-86F. I've saved the mention of this largest Sabre until last as this kit has no peer. It was one of the first plastic kits to include metal parts and is extremely accurate and well detailed. If you desire to own a veritable monument to the Sabre and have the space to display it, this is the one to have. Whenever it reappears in the Hasegawa catalogue from time to time it cannot help being a popular subject among beginners and experts.

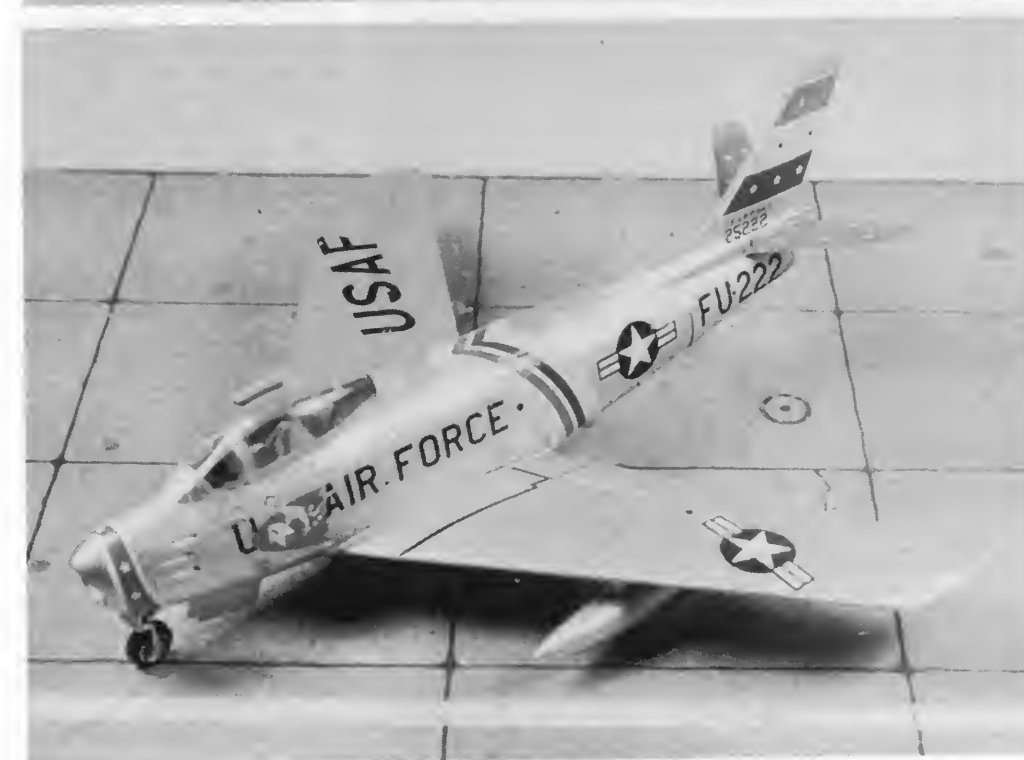
ACCESSORIES

Sabre decals are far too numerous to list them all, but I will mention a few of my

The Airfix F-86D with Micro's variation of the kit decals.



Left: Heller Peruvian F-86F. Above: Some of the many F-86F decals. Middle: A Heller F-86F in Equatorian markings. Bottom: One last Heller F-86F with Micro decals.



favourites. The RAF Sabre squadrons are quite well covered by Modeldecals latest sheet. Other user air forces are covered as follows: USA, Superscale; Canada, Flight Colours; Japan, Hasegawa decals. The aircraft of the JSDF are also well covered by the kit decals included in the Fujimi series.

While most of the major Sabre variants are well represented by the listed injection moulded kits and other variations can be made by 'cross kitting', some of the more esoteric types can be had by using the products made available by the 'cottage industries'. The F-86H can be built by utilising one of three fuselage conversions, one injection moulded from Ventura Models and two others from Rareplanes and Airmodel, both of which are vacuforms. The model in the photograph was scratchbuilt before these products were available, sigh.

Other versions possible are the TF-86 from Falcon and the Australian Avon Sabre and F-86K from Airmodel, all vacuform fuselage conversion kits.

In conclusion, it may be said that the Sabre is one of the better covered aircraft subjects. If the aircraft appeals to you, this listing should assist in achieving an impressive collection. One that could keep you off the streets for some time to come.

J.P. Wood

UNMADE PLASTIC KITS
BOUGHT AND SOLD
ALSO BOOKS AND MAGAZINES
PROFILES ESPECIALLY WANTED
M.A. ROLLING
37 Shrewsbury Fields, Shifnal, Salop
Telephone: Telford (0952) 460587
Send 50p for 3,000 plus item
sale catalogue

ACCENT ON ARMOUR



LEOPARD 2

The finished Leopard 2 model.

IN 1956 Germany, France, and Italy formulated a requirement for a new MBT, which resulted in France building the AMX-30 and Germany the Leopard. The two tanks were to be put on a joint trials programme with the winner to be adopted by all three countries. As with most multi-national projects, each nation was to eventually go its own way with France and Germany building their own tanks and the Italians buying the M-60A1. The first production Leopard 1 entered service with the German army in 1965 and was the first tank to be built by Germany since the end of World War 2. The Leopard was almost the exact opposite of the Wehrmacht's last Panzers, the Tiger and the Panther. Both these World War 2 tanks had been heavily armoured but the Leopard 1 had less armour than the American M-4 Sherman. It is interesting to note that of all contemporary designs, only the French AMX-30 had thinner skin. However, the Leopard 1 was fast, over 40 mph, and was

armed with the superb British Vickers L-7 105mm gun. The Leopard was to be built in four models with the final versions equipped with a new spaced armour turret.

AMERICAN CO-OPERATION

During the 1960's Germany again entered a joint tank programme, this time with the United States. The resulting MBT-70 was just too complex and the project was cancelled in 1970. Germany went on to build the Leopard 2, with one of the early prototypes being built to US specifications, known as the Leopard 2AV. Early models of the Leopard 2 featured space armour on both the hull and turret and was much better protected, bringing the weight up to 54 tons. To cope with the extra weight, the Leopard 2 utilised the MTU MB873 1,500 bhp diesel engine, which had been developed for the MBT-70. This engine, coupled to a new advanced torsion bar suspension, gave the Leopard 2 an

increase in speed over the Leopard 1 of about 5 mph and the heavier weight also gave a smoother ride over rough terrain. The final prototypes were fitted with British Chobham type armour, which is protection against all known anti-tank weapons. Though the Vickers L-7 gun was a highly successful weapon, the Germans copied the Soviet Union by fitting an 120mm Smooth-bore to the Leopard 2.

In 1977 the Bundeswehr ordered 1,800 Leopard 2's from Krauss-Maffei and MaK with the first production tank being delivered in 1979. The Leopard 2 is an impressive tank, both in appearance and capability. The first tanks were delivered to the Troop Combat School No2 at Munster, with the 1st Battalion becoming fully operational early in 1981. Eventually the Leopard 2 will equip all but four of the front line tank Brigades. The remaining Brigades are to receive the Leopard 3 MBT when it enters service in the mid-1990's. The Dutch government ordered

445 Leopard 2's to replace its ageing fleet of Centurions. These are similar to the German model, but have different smoke dischargers, FN machine guns replacing the German weapons, and several slight internal changes. The drivers sight and night scope are different and new intercoms and radios are installed. The Swiss army also ordered the Leopard 2 in August 1983, purchasing the first 35 outright and then building the remaining 345 tanks under licence for a total order of 380 vehicles. Similar to the Dutch, the Swiss have changed some of the ancillary equipment including the machine guns. A Gravier fire suppression system is also fitted.

FEATURES

The Leopard 2 is of conventional layout with a four man crew that includes driver, loader, gunner, and commander. Both the hull and turret are constructed of laminate or 'Chobham' armour,



though in order to keep the weight down, spaced armour is used in some less vital areas. The powerplant is the MTU-MB 873 KA501 turbo-supercharged diesel engine which has a total power output of 1,500 bhp (DIN). This gives the Leopard 2 an outstanding automotive performance with a top speed of over 45 mph and cross-country speeds in excess of 25 mph. The suspension system is known as 'advanced torsion bar' and has worked well considering the tank weighs in at 54 tons. Normally this type of suspension system is found only on lighter MBT's of the 30-40 ton class.

The most revolutionary feature of the Leopard 2 is the 120mm smooth bore gun which was developed and built by Rheinmetall. This type of weapon has the advantage of extremely high muzzle velocities, which are in excess of 1,600 metres per second with the barrel being relatively cheap to produce. There is a price to be paid and that is the overall accuracy of the system. Smooth bores are accurate out to 1,500 - 2,000 metres, but thereafter the accuracy rapidly deteriorates. Two types of round are used, APFSDS-T, the primary anti-armour ammunition, and HEAT-MP-T for secondary targets. Because of the limited accuracy, no HE round is provided for the fire-support role. The Leopard 2 carries 42 rounds of ammunition, 15 are stowed in the turret with the remainder housed in the front hull. The normal load is 18 APFSDS-T and 24 HEAT-MP-T rounds.

The rear bin is lined with Plasticard.

The Leopard was designed to counter the Soviet T-62, T-72, and T-80 MBT's, which now equip the armies of the Warsaw Pact in large numbers. On a one to one basis the Leopard 2 is judged to be far superior, having armour that is thought to be proof against the Soviet 125mm APFSDS round over the frontal arc. The Leopard also has fully stabilised armament and better fire control systems. Soviet tanks still have very limited stabilisation and it is normal practice for them to stop before the gun is fired. The Leopard gunner is provided with an EMES-15

sight with integrated laser range finder, and a small thermal image camera system. A computer links all the fire control systems giving a very fast target acquisition and engagement time. The gunner also has an optical back-up system, should the primary system be damaged or fail during combat.

SERVICE

The Leopard 2 was the first of the current generation of Main Battle Tanks to see service being followed by the M-1 Abrams and the Challenger

Carefully fill the joints on the hull sides.

Mk1. The Abrams is very close in concept to the Leopard with both tanks having a common ancestor in the cancelled MBT-70 project. Both tanks are designed for fast shooting at short to medium ranges and have only limited all-weather capability. Automotive performance in the two tanks is very similar with top speeds of around 45 mph for the Leopard and M-1, and 42 mph for the M-1A1. The layout of the two tanks is also very similar, both having turret ammunition stowage with blow-off panels to contain ammunition explosions. The British Challenger shares little with the Leopard and Abrams as it is a long-range tank killer being able to fight equally well in all weather conditions, day or night. This is made possible by the TOGS, (Thermal Observation and Gunnery System) which is far superior to the thermal image camera systems fitted to the German and American tanks. All fuel and the bagged ammunition charges are situated deep in the lower hull, the charges being kept in 'wet' stowage bins. This makes the Challenger a far safer tank than either the Leopard or Abrams, but it does slow down the sustainable rate of fire. British tank crews apparently feel that this is a price worth paying. In terms of protection the Leopard 2 falls well behind the Challenger and Abrams, which have more advanced types of the Chobham armour





and more of it.

Both the Leopard 2 and Abrams have performed outstandingly well in the Canadian Army Trophy competitions which is held every four years at the Honne gunnery ranges. This prestigious NATO event was first staged in the early 1950's, when the M-46's and Centurion's formed the backbone of NATO tank strength. By today's standards the gunnery is short range, which suits the Leopard and Abrams much more than the British Chieftain and Challenger. The competition consists of a series of 'Battle Runs' where the tanks move from one location to another, engaging targets with both main and secondary armament. In the last competition the Challenger came out very badly, but the British tanks were handicapped by not being allowed to use their primary gunnery system, TOGS, which also meant the crew had to adapt to a non-standard gunnery drill for the competition. For these reasons it would be unwise to speculate on the relative performance of the three tanks, using this competition as a yardstick.

Both the Leopard 2 and the Abrams have recently been considered as a replacement for Britain's remaining Chieftain tanks. Although the results of the individual trials were kept secret, some snippets of information have since emerged. Neither 'off the shelf' tank would satisfy the British requirements, so the tanks in

Make the gunners sight from Plasticard and Microstrip.

The front hull of the Esci/Ertl kit can be improved with a little Microstrip.

any major improvement programme and has remained much the same. Some internal changes were made on late-production vehicles and the earlier tanks have been modified to the latest standard. However, unlike the British and the Americans, the Germans do not constantly update their armoured vehicles, preferring to build new vehicles as technology advances. By the end of the 1990's the Bundeswehr will have up to four MBT's in service, the Leopard 2, Leopard 3 from 1994, and a totally new tank due to enter service in 1998. As well as these, it is expected that some old Leopard 1's will still be in service with reserve units at that time.

ORGANISATION

Currently the Bundeswehr has 17 Armoured Brigades, each having two tank battalions, one of mechanised infantry, one 'mixed combat', and one artillery battalion. There are also 15 Armoured Infantry Brigades which have two mechanised infantry battalions and one tank battalion, otherwise they are similar to the Armoured Brigade in composition. These are distributed amongst the Bundeswehr's 12 Divisions, of which six are Armoured, four Mechanised Infantry, one Mountain, and one Airborne.

The Armoured Division has two Armoured Brigades and one Armoured Infantry Brigade,

in an acceptable form until the latter half of the next decade. Opinion was split with regards to the armament. The British rifled 120mm is more accurate, longer ranged, and more versatile, while the 120mm Rheinmetall would standardise the ammunition supply. The British government decided to go for the Challenger 2, which on paper is far more advanced than either Leopard or M-1A2 Abrams.

Since its introduction, the Leopard 2 has not undergone



The Esci kit lacks tools on the rear deck which makes it look rather bare.

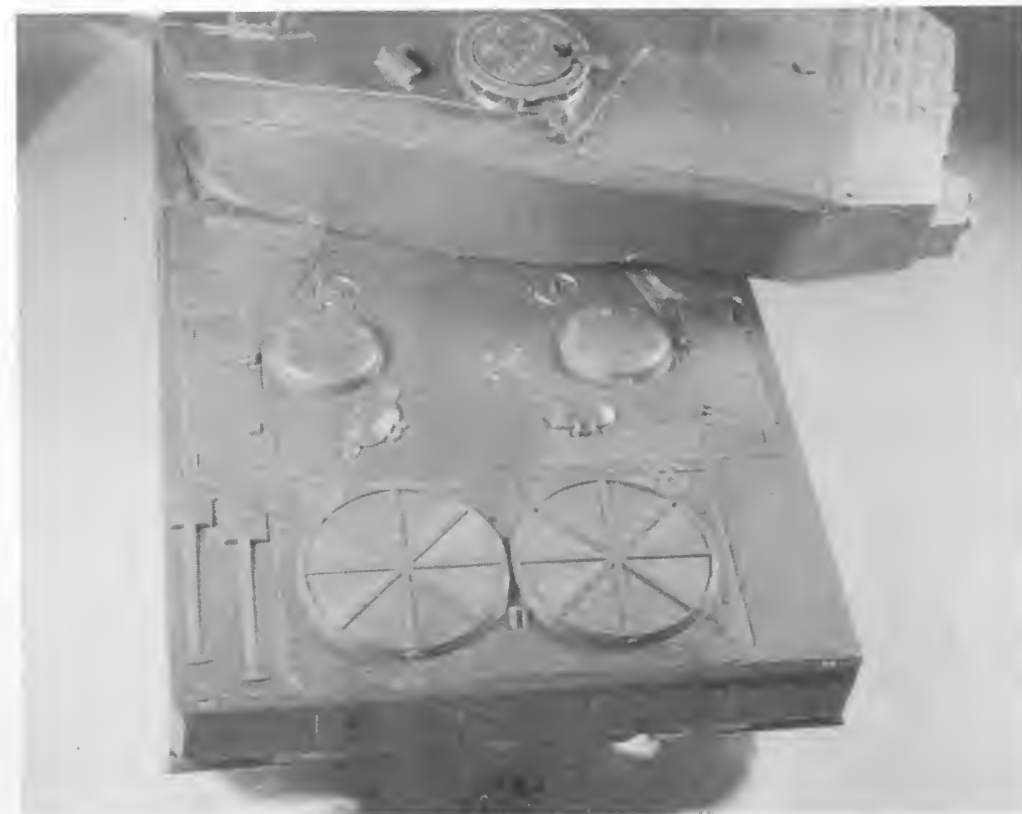
with Armoured Recce, Anti-Aircraft, and Artillery units at battalion or regiment strength. Mechanised Infantry Divisions are similar but with the 2 to 1 ratio of tank and mechanised infantry brigades being reversed. These Divisions are backed up by a Territorial Army with 12 'Home Defence' brigades, each with two tank and two infantry battalions. The standard Bundeswehr tank battalion has a total of 41 MBT's. In the 'regular' battalions these tanks are Leopard 2's and Leopard 1A4's, with the M-48A2G2 and early-production Leopard 1's being included in the 'territorial' tank battalions.

As well as in the armoured and mechanised infantry battalions, tanks are also used in the Mixed Combat battalions, again in a rough 2 to 1 ratio. The mixed combat battalion in the Armoured Division is equipped with 28 MBT's and 11 IFV's, while those in the Mechanised Infantry Divisions have 24 IFV's and 13 MBT's.

The Bundeswehr is the third largest army in NATO, behind the US army and the Turkish army, though the latter consists largely of un-mechanised infantry. Since it was reformed in the 1950's, it has remained a purely self defence force and as such has no overseas commitments. In terms of armour, the Bundeswehr has a total of 49 tank battalions, with another 24 'territorial' battalions which can be mobilised at short notice. The Bundeswehr has had to rely heavily on conscription for recruitment, but is still a highly motivated and well trained force by any standard. There presently exists a great deal of friendly rivalry between German and American units with much time and valuable resources spent on trying to win the major NATO interservice competitions. Exercises are regularly held in Germany, with the Bundeswehr often playing the part of 'Red Force', but German tanks are seldom seen outside her national borders. However, at this time, there is no long range tank gunnery training available in Germany and because of this, German tanks and their crews visit the tank gunnery school at Castlemartin on the Dyfed coast of south Wales.

MODELLING THE LEOPARD

There are three kits of the Leopard 2 available in 1:35th scale, two from ESCI/ERTL and one from Italeri. The Italeri kit was on the scene first, followed late last year by the Leopard 2 and Leopard 2A3 kits from ESCI. Dealing with



the Italeri offering first, it is nicely moulded in dark green plastic with crisp detail. In all there are 200 parts, plus track sections in vinyl and a decal sheet. Italeri has earned a reputation for quality, but some of their recent kits have been simplified as a way to keep the prices down. The Leopard 2 kit does have areas where the detail could be improved, but is good value for money priced at £6.99.

I started construction by looking over the parts and deciding where to add more detail. The turret has a stowage bin on the rear bustle, which on the kit is depicted closed with a cover fitted. To me this looked rather crude, so I decided to open up the turret top and fit a proper stowage bin to improve the appearance. The plastic is quite soft on Italeri kits and I find it can be cut much more easily than the hard plastic generally used by Tamiya. I started out by drilling holes in the bin cover, after first removing the three nice buckles for my spares box. With several holes drilled, it is an easy task to remove the remaining plastic with a sharp knife blade. After removing the cover, the next job is to make the interior of the bin out of plasticard. To do this I cemented the turret rear, part C-49, to the turret top and left the parts aside to dry. I then fitted the turret interior walls by the trial and error method, that is to keep removing a little off the piece of card until you have a perfect fit. For the walls, I used 40 thou plasticard

for rigidity. For this sort of work I use a rough file rather than a knife so the finished walls will have straight edges. When the interior walls were ready, I cemented them in place with liquid poly cement from Humbrol. The turret can be further improved by opening up the gunners sight barbet on the front left hand plate. In most of the published photographs this sight is shown open, revealing two glazed panels. I cut out the front and built up the sight with plastic card that I had left over from the Tamiya M-1 kit. This thin clear card is superb for glazing and the left over pieces are kept safe in self seal plastic bags.

The hull needs very little work and the overall detail is quite good. I started out by carefully filling the hull sides around the stowage boxes with this being the only time I had to use filler putty on the entire kit. It is best to assemble the lower hull and then add the tracks before cementing it to the upper works. The tracks are the worst part of this kit and on my model I replaced them with a set from the ESCI kit.

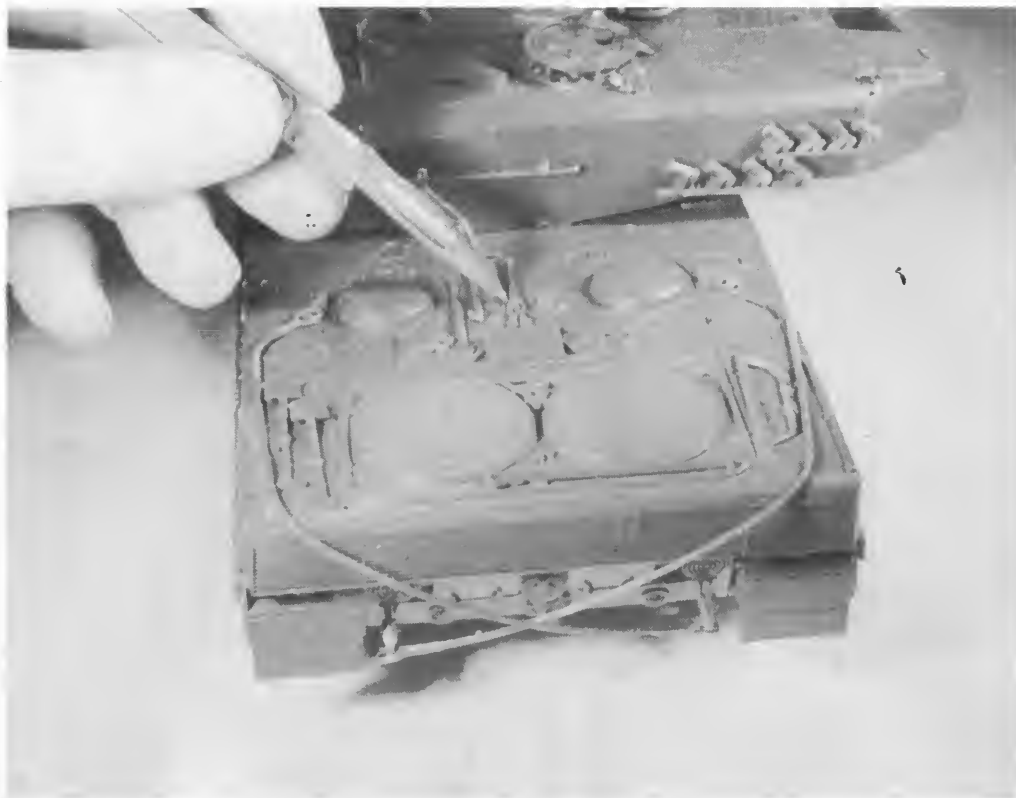
THE ESCI/ERTL KIT

Next, I built up the ESCI Leopard 2A3 kit for a comparison. This kit is also well moulded, in a sand coloured plastic on the Leopard 2 kit, and in dark green on the Leopard 2A3. Both kits are identical, except that the Leopard 2 has Dutch decals and the 2A3 has one

Swiss and two Bundeswehr options. Both kits contain over 200 parts, but only actually 180 go to make the basic model, while the others are optional to make a Dutch version with different smoke dischargers and machine guns. At first glance the kit looked almost identical to the Italeri, though the plastic is shinier and looks more crisp. However, on a closer inspection I found that the kit was not too well detailed, although still quite acceptable by today's standards.

Construction started with the lower hull, which on this kit comes in three pieces, two side pieces and the belly plate. Unfortunately the belly plate on my kit was badly warped and could not be used in this condition. To straighten this part while I glued on the side pieces, I taped it to a piece of wood using double sided tape. Once the side pieces were dry, the piece of wood was carefully removed. The rear hull was then glued in position, which took a little time as this part was also a poor fit. Luckily I was able to refer to the Italeri model for details. The suspension and tracks fit without any trouble with the tracks being by far the best part of the kit.

The upper hull is not too bad as far as the detail is concerned and it can be improved by cutting off the spades and adding new ones from the scrap box. No other pioneer tools are provided, which makes the engine deck look rather sparse when compared to the Italeri model. The



side pieces which represent the stowage bin lids are a poor fit and will need a touch of filler putty. All Leopard 2's have a set of studs for the tracks mounted on the front of the vehicle which are located on the front plate and on the track guards. These are not provided on the ESCI kit, nor are there any brackets in the places where the studs are stowed. These brackets can be easily added from Micro-Strip or thin strips of card. Care must be taken with the side plates which fit over the trackwork. There are no proper locating devices, so make sure the larger pieces, 4A and 9A, are cemented level and not too high on the hull.

The ESCI Leopard 2 kit is identical in terms of the plastic parts, but the instruction sheet gives details of the two Dutch tanks featured on the decal sheet. These differ from the German model in having different smoke pots and FN GMAG machine gun. The Dutch tanks are usually painted in standard NATO Green, but also appear camouflaged. In conclusion, both kits are good but have their own specific advantages. The Italeri kit is cheaper and much better detailed and is easier to build. The two ESCI kits are pretty basic but have the advantage of the good tracks and the option of two versions. Photo etched detail sets are also available for the Leopard and the On The Mark set costs

Paint the basic colour first and then add the camouflage colours.

about £6 from ED Models. This will be suitable for either kit, but some surgery is needed and I would only recommend these delicate parts for the more experienced modeller.

CAMOUFLAGE AND MARKINGS

On its introduction into service the Leopard 2 was painted in the NATO Green colour officially referred to as Nato-oliv RAL 6014. At this time, the Bundeswehr had a whole range of washable colours for temporary camouflage with the colours simply being washed

off after use. The colours were Red-Brown, Dark Green, Black, and White. Patterns were usually 'hard edge', brush painted over the basic colour. It must be said that these paints were not used very often and pictures of them applied to tanks are rare.

The Bundeswehr experimented with 'splinter' camouflage schemes during the 1983-85 period. These were very similar to those used by the Luftwaffe for their aircraft in World War 2. The basic colour was changed to Bronze-grun RAL 6031 and was over-

Define the tools with a sharp blade.

painted in broad straight edge 'splinters' of Teerschwarz RAL 9021, both colours being more matt than the RAL 6014. This scheme lasted for about two years and was replaced by another entirely different pattern. This was a three-colour scheme, Bronzegrun, Teerschwarz, and Lederbraun RAL 8027 in an irregular 'foliage' pattern with hard edge. This scheme is currently in use.

Bundeswehr vehicles carry markings not far removed from those of the old Wehrmacht. The tanks carry the national insignia, a black cross with white border, which is carried on the turret sides along with the tank number. These are black with white outline to match the crosses. Unit markings are carried on the left hand front trackguard and again on the rear hull, the actual units being carried in the numbers each side of the emblem. For example 3-363 = 3rd Panzer Division, 363rd Pz Battalion. Bridge classification plates are standard NATO and carried on the right hand trackguard.

The Leopard 2 is also in service with the Swiss and Dutch armies, and as far as I have been able to gather all export tanks were painted in NATO Green. Some Dutch tanks have been painted in a 'Leopard Spot' camouflage with light green circular spots being applied over the basic colour. RAL 6014 = Humbrol HX 1
RAL 6031 = Humbrol HB 1
RAL 9021 = Humbrol HB 10
RAL 8027 = Humbrol MC29

Phil Greenwood

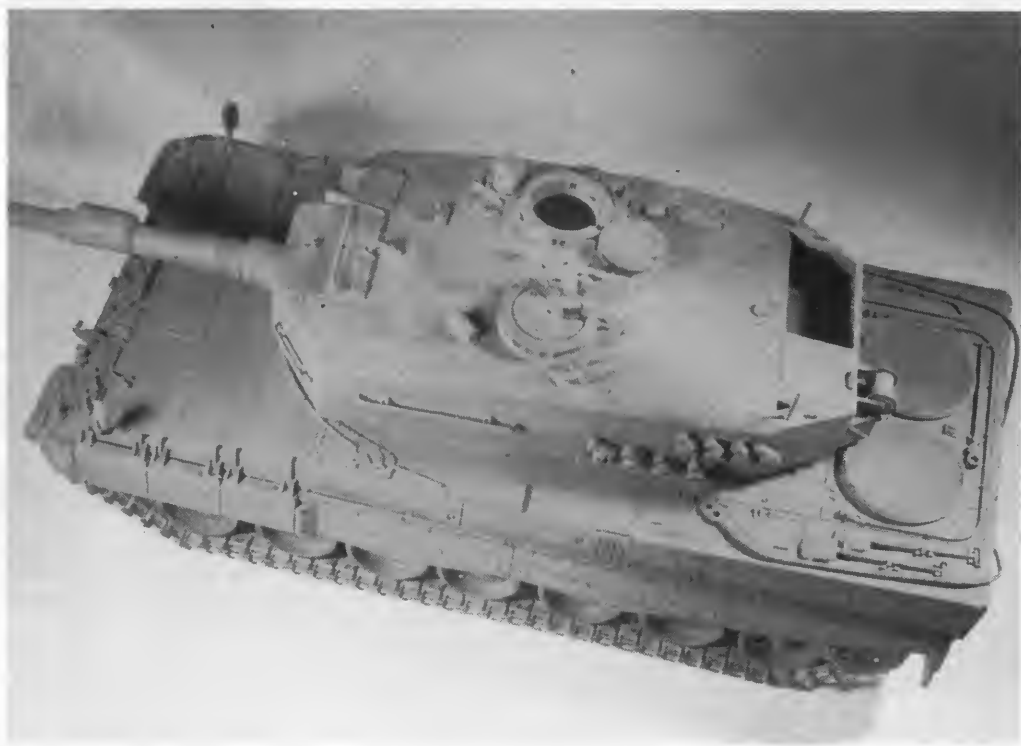


PHOTO PAGE — THE LEOPARD 2 ON WINTER EXERCISE

Photographs by R. Morrison





BRASS CLASS

IT is not without a tiny degree of wholly irrational guilt that I put these words to paper. This inhibiting factor to common sense was installed in my brain years ago by the institutionalised policies of a well meaning organisation that was created to further the hobby of plastic modelling. No need to name it, but I will merely give readers a hint about the one of which I am now writing. Its initials are I-P-M-S. The 'P', of course stands for plastic and some of its founding fathers saw fit to create an extremely literal and in the end, quite arbitrary set of rules which excluded all forms of materials from the construction of scale models except plastic. This dogma has permeated our most enjoyable of hobbies for decades, hence my twinge of guilt for permitting myself the tenacity to question its validity.

While participating in a model display recently, one of the nation's better known modellers whispered to me in confidence that his biplane model was equipped with bamboo struts as plastic ones would not have had the necessary structural strength to support the upper wing. It suddenly became painfully obvious to me that while I was aware of the apparent diver-

gence from accepted plastic modelling parameters, I was also distressed that this revelation had to be brought to my attention as a sort of a confession of heresy. Upon reflection, the situation has become almost a comic opera where we seem to have lost sight of the forest because of the quantity of the trees.

It seems to me that scale modelling is the object of our enjoyment and not the plastic itself. It is with this thought in mind that I would like to bring other materials to the attention of our readers that can be of help to them in the pursuit of an ideal model. This first article will attempt to enlighten those who have not yet discovered the wonders of photo-etched metal accessories and give some hints on how to apply these marvellous little parts to their plastic model kits.

MODEL RAILWAYS

The very first photo etched metal parts that were brought to my attention were some fine little kits of 'N' gauge railway carriages about ten years ago. The next area of modelling that was to 'discover' this useful technique was that of car modelling where first the very complicated wire wheels

Some of the wide selection of photo-etched products.

appeared and then later, just about any small intricately detailed part was likely to be produced by this process.

If my memory serves me well, the first etched metal parts for model aircraft came from Waldron products in southern California which took the form of well executed cockpit parts. This small firm probably had its origin in the silicon valley where the photo-etching process is firmly established in the electronics industry. The first etched model aircraft parts to appear in the UK were from Tim Perry's PP Aeroparts when he gave us all his still extremely useful aircraft boarding ladders.

What follows will be as complete a list as I am now able

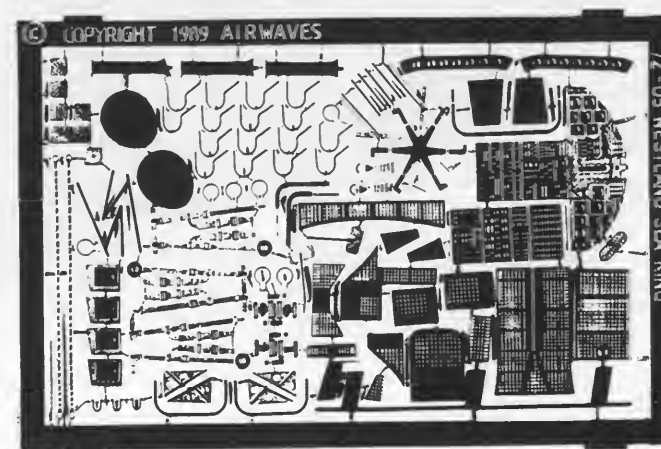
to compile of what is currently available.

FROM THE COLONIES

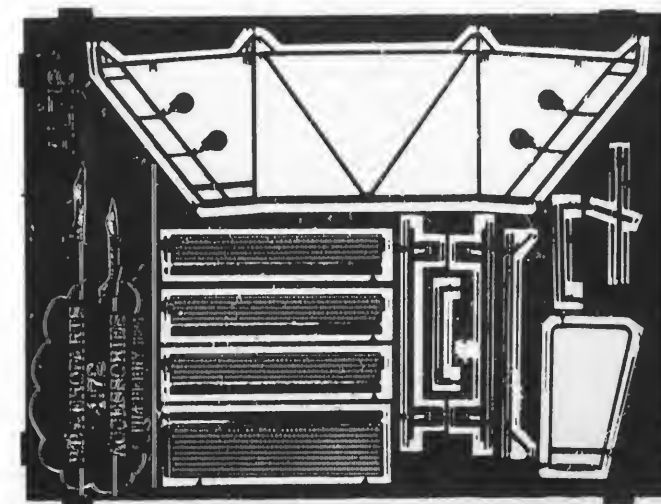
Most of the etched metal products from the USA are available in the UK from the better hobby shops but they do require some telephoning around to locate. Ship modellers will already know about Gold Medal Models, 12332 Chapman Avenue, No.81 Garden Grove, California, 92640, USA, who produce an excellent range of accessories for nautical superdetailers. Masts, railings, cranes and anchor chain are this firm's speciality.

Model Technologies of 15561 Product Lane, Unit D16, Hun-

The magnificent Airwaves Sea King sheet.



JUNE 1989



The very useful PP Aeroparts maintenance stand.

tington Beach, California 92649, USA, produces a fine range of model aircraft accessories in a variety of scales. They compete with the aforementioned Waldron products who now reside in Oregon at PO Box 4321, Merlin, OR, 97532.

One of the other US firms who were among the first to see the potential in photo-etching small parts for modellers is Photo-Cut of Box 120, Eriesville, New York, 13061, USA. Their products are unique in the field as they are produced without the typical outside frame and the connecting links from the frame to the parts. The tiny bits are supplied on a waxed card that holds them in place until you need to remove them for use. As some of the parts are very small indeed, this operation is not without pitfalls but Photo-cut generously offers to replace parts lost by the more heavy handed of us modellers. Their range of parts span a multitude of scales and contains many useful and sometimes even brilliantly conceived items.

AIRCRAFT BOARDING LADDERS

There is no need to name Tim Perry and his basic line of products as his name is synonymous with model aircraft boarding ladders. His products are also among the very finest offerings of this type of accessory. PP Aeroparts were the first on the market to be made in the UK and continue to increase the contents of their catalogue with new and better modelling ideas. PP Aeroparts is located at Unit 12, Station Road Workshops, Station Road, Kingswood, Bristol BS15 4PR.

Some other new names that are now producing etched metal accessories in the UK are: Akita Models, Unit 5,

Gold Medals 1:700th scale Soviet ship set.

JUNE 1989

out of the melee and Maquettes Dausie (MD) offers a small selection of aircraft accessories that include a maintenance stand and a simply marvellous tool box in both 1:72nd and 1:48th scales. These are available from Trame Selection, 9 Rue Mayet, 75006, Paris, France. The Italians are represented as well in two ranges of 1:43rd scale PE car parts, FDS and Tron, both of which are carried by Grand Prix Models, 167 Watling Street, Radlett. The selection of windscreen wipers, bonnet latches, grills and other typical small bits can also be utilised for aircraft models with the addition of some creative thinking.

CONSTRUCTION TIPS

With the exception of the Photo-Cut line, all the PE parts must be first separated from the framework that contains the small parts. Two types of material are used on the photo etching process and they are brass and stainless steel. The steel type is distinguished by its silver colour and is a somewhat tougher material, though only slightly less easy to work with than the brass. Japanese 'high-tech' kits usually contain this type as it is a bit more attractive. As most of the parts will receive a coat of paint, it really doesn't matter what the parts are made of. I use a pair of small scissors to separate the parts and do so with the utmost care. A craft knife may also be utilised but often the force required to perform the act of separation can also be transferred to the tiny part itself which results in the part departing the work area to be assimilated into the carpet for ever.

OTHER NATIONS

The French are not to be left

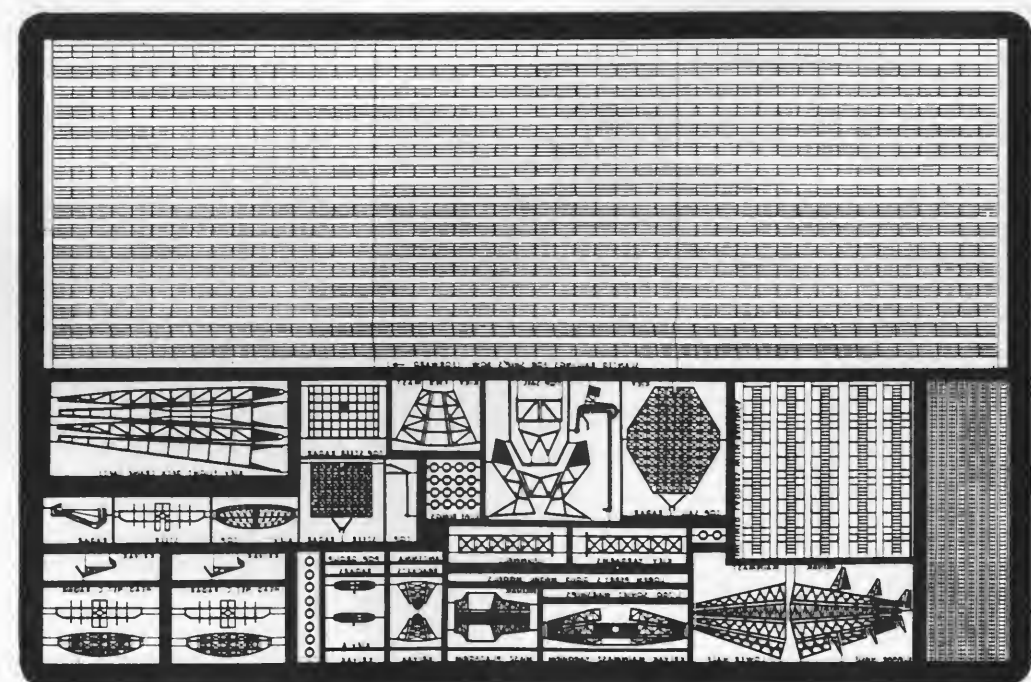
Always use tweezers to transport the parts to your model for installation, taking care to do so over a clean work area so if you do drop the part, it can be easily located.

Normal plastic adhesives will not secure the metal to the plastic surface of your model so superglue must be used. Always use a minimum of this type of adhesive as it works better than using too much. The later, highly viscous varieties of superglue are much easier to work with. Be sure and work slowly and deliberately when applying these techniques as it will pay off by not having to repeat or re-do your efforts.

Metal parts do not accept paint as well as plastic ones so a coat of a matt primer colour prior to the final painting is often a wise step. The final results invariably result in very pleasing models and having such products available saves hours of painstaking effort.

In conclusion, the combination of metal and plastic technology can only raise the standard of our models and that is one of the essential ingredients in the ultimate enjoyment of our hobby. I say let's all take the 'P' out of the IPMS and rename it the IMS so that modelling is the operative rather than the material. After all, when plastic modelling was a new hobby, those of us who were building our models of wood treated the new technology of plastic kits with a degree of scepticism. Now that there are no longer any more scale model kits made from wood, the new plastic hierarchy seems to exclude innovation from its realm. In the end, it has to be the finished model that counts and not what it's made of.

J.P. Wood



AIRFIX MAGAZINE — PAGE 459



TAMIYA YAMAHA

Greg Kerry models a 1:12th scale racing bike at speed

THIS is actually the second YZR500 Yamaha in the Tamiya range. The earlier model (recognisable by its yellow and black finish) was ridden most notably by Kenny Roberts in the late 1970s. Compared to the later OW70 it seems terribly dated now with its four cylinder transverse in-line motor and tubular cradle frame. The later kit of the OW70 produces a model representing the machine piloted by the same King Kenny in 1983, which was his final year in Grand Prix racing as a full time rider. Later he became manager of the Yamaha Lucky Strike team, competing directly against his former works Yamaha team boss, Giacomo Agostini.

The 1983 YZR500 was powered by a water-cooled V-four two-stroke engine which managed to produce about 140 Bhp. In a motorcycle weighing

a mere 118kg, that means the power-to-weight ratio was phenomenal. This amazingly low weight was at least partly attributable to the bike's frame which was an aluminium double-yoke affair that was incredibly advanced in its day but now that road bikes are appearing with similar frames, it seems little more than standard.

I decided to model the OW70 in company with a rider figure. Tamiya does market a boxed set of the OW70 in company with a 'straight run' Kenny Roberts figure, however, of the three Grand Prix rider kits available in the Tamiya range I much prefer the one in the 'hard cornering' stance. All three types of figure (the third is in a 'push-starting' posture) can be bought separately with each containing four complete sets of decals. You may find it

Kenny Roberts takes a last ride in 1:12th scale. Note the contrasting finishes of helmet and leather suit; the former glossy, the latter semi-matt.

useful to know which decals accompany which figure, so a list follows: Cornering rider, Kenny Roberts - early yellow/black Yamaha, Randy Mamola - Suzuki, Kork Ballington - Kawasaki, Freddie Spencer - Honda; Straight run rider, Kenny Roberts - red/white Yamaha, Marco Lucchinelli - Suzuki, Plus Ballington and Spencer as above; Starting rider, Tadahiko Taira - Kawasaki, Takazumi Katayama - Suzuki, Plus Roberts (late) and Spencer as above.

Each figure kit costs about £2.75 and comes with a pair of alternative helmets. The reason I prefer the cornering figure is that, once astride the bike and cemented in place, the figure's outspread right leg provides the perfect point for the completed model to rest on. With the straight run rider the model is not free standing and using some form of visible support to prop it up makes it look less than realistic.

CONSTRUCTION

I have already made a couple of these rider and machine combinations so I knew exactly how I intended setting about the construction. I wanted the finished model to convey an impression of movement so I

planned to cut away the wheel spokes and fill in and file off all the features on brake discs, rear drive sprocket, and the chain itself to create a sense of blurred high speed motion.

This meant that I did not waste time or effort detailing the engine as I might otherwise have done as once the fully painted fairing was in place, it would never be removed again and the engine never seen by the human eye. Nevertheless, I followed my usual practice of making all control cables and brake lines from stretched sprue rather than using the overscale vinyl tubing supplied with the kit. To help position the sprue cables I snapped off the locating nodules on all parts intended to be used with the vinyl tubing and drilled short holes in their place. I did use the thin vinyl for spark plug wires but, in retrospect, this was a mistake. Even with the fairing in place this is still visible and it looks rather unconvincing. The thicker vinyl tubing, as supplied, is perfectly OK for all the water-cooling lines.

As I've said in previous articles on these Tamiya kits, the best possible detailing reference is the box-top artwork. It's a great shame that it only shows the machine from one side.

Stage 1 Main Frame

Part C30 should have a small hole drilled in its forward end face as an anchor point for a length of black wiring which curves down under the main frame and disappears beneath the petrol tank. Each of the two coils (C2 & C3) require a pair of similar holes to accommodate wiring also running into the murky recesses of the tank. Note that one wire should be black, the other red. Also, another mounting hole should be drilled in the side of the frame just forward of the right hand coil providing a fixing point for a wire guide which restrains the petrol tank breather tube (all shown in the box-top art). The guide is made from thin wire shaped around a paintbrush handle and superglued in place. One further detail to note is that the rear brake line running from the reservoir to the piston (all moulded integrally with the right main frame) should be a translucent green.



This shows the filled in and rubbed down clutch housing.

Stage 2 Crankcase and Gearbox

The engine requires some carefully detailed painting but the instruction leaflet is very good at explaining this. Because of the sense of movement I was aiming at, the exposed clutch assembly (DI6) which would revolve at speed on the real machine, was filled in. In fact, this is barely visible once the fairing is fitted but at this stage of construction I wasn't aware of this.

Stage 3 Engine Cylinders

Here it is necessary to spend some time rubbing down the joint lines of each individual cylinder. This is not very apparent on my model, but if you are building yours with the transparent fairing unpainted or indeed with one part of the fairing cut away, then this sort of care will be essential.

Stage 4 Carbs - Cylinders - Gearbox

The only point to note here is to paint the centre of each carb's air inlet matt black to give an impression of depth.

Stage 5 Engine to Frame

This is more than a little tricky due to the engine being a very tight fit within the lower cradle of the main frame. You need to be especially careful not to scratch the engine paintwork at this stage.

Stage 6 Radiator and Rear Damper

Note that the filler cap atop the radiator should have the mould line left on whereas on the rest of the radiator this line is removed. With the radiator and damper assemblies in place (and plug wires added), the whole unit can now be dirtied up a little, unless you are modelling a machine in pristine condition. Racing bikes, I have found, usually have immaculate, well-polished exteriors, such as: seat unit, tank, and fairing, but their engines are invariably grubby and greasy so dry brushing is called for here.



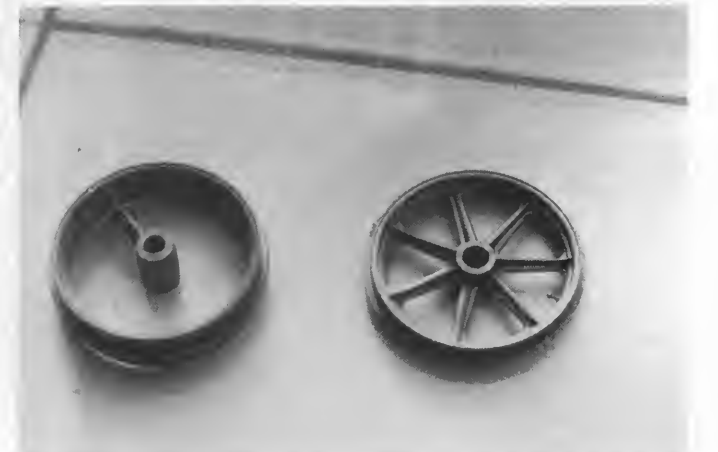
Before and after treatment to the front brake discs; originally I intended to leave the concave area in each disc's centre but getting an acceptable finish on the filled areas proved too difficult so after the photograph the concave areas were filled completely flat which looks well enough on the completed model. No such problems occurred with the rear disc or sprocket.

JUNE 1989

Stage 7 Rear Wheel and Swing-Arm

As previously mentioned for the 'speeding by' look I was intending, all the wheel spokes except one are removed. The one remaining can then be hidden behind part of the swing-arm. Hacking the spokes out of the rim is no simple job. I sawed through them with a triangular section file and then spent considerable time with wet-and-dry paper sanding the jagged cuts down. I also trimmed the remaining spoke's cross section down to make it that little bit more difficult to spot later. Although the wheel rim is painted red and aluminium, I left this last spoke in the grey undercoat as I planned to photograph the model against a grey background to make it invisible.

Before fitting the tyre, the 'Dunlop' and size markings must be rubbed down with wet-and-dry paper. Then, the brake disc should have its features filled and sanded, as should the main drive sprocket. Originally, I attempted to file all the features off the chain itself but this proved to be too thin and fragile and it broke up. Consequently, I trimmed the chain completely away from both front and rear sprockets and later, once stage 8 was complete, wound a suitably sized elastic band around them, super-glued in place and painted it gunmetal. The result looks reasonably like a fast moving chain. Note that the main rear brake line is medium grey rather than black. Lastly, the brake caliper needs a backing plate added. Cut this from plastic card and shape it to match the outside face.



Before and after spoke removal to the rear and front wheel.

Stage 8 Attaching Swing-Arm

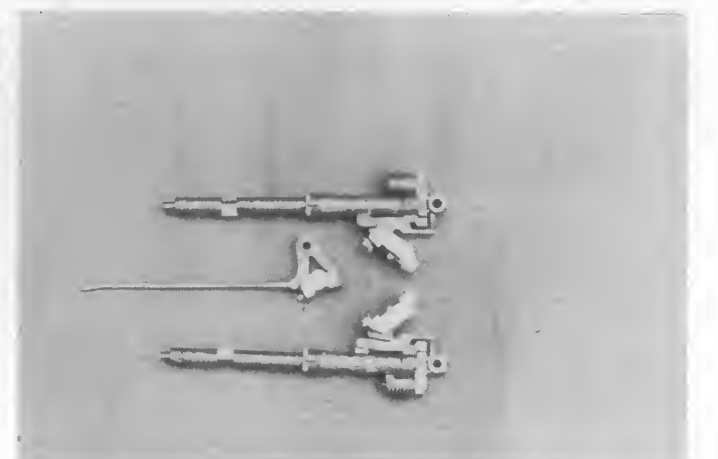
Add the elastic band 'chain'. I found it necessary to superglue the swing-arm in position even with the retaining screws very tightly in place. Don't do the same with the wheels if you intend photographing your model as I did as both wheels need to turn so that the spoke remaining on each can be hidden for different camera angles.

Stage 9/10 Attaching Exhaust Pipes

The only problem here is with the upper pair of exhausts. The kit instructions tell you to glue these in place and later push the seat unit over them by easing apart its sides and forcing it down. However, I know from bitter experience that this can easily split the seat unit's well finished joint and it really is a very poor idea. Far better then to cut the outside bulge of each exhaust down as far as you dare (see photo) as this piece of pragmatic surgery will be totally out of sight once the seat-unit is added. The lower pair of exhausts should have their moulding recesses filled and rubbed down, because of their gaping size. Plug them first with scrap plastic then paste filler over this.

Stage 11 Front Forks

The moulding recess on the inside of each fork slider should be filled and then both brake calipers need an inside face added in a similar manner to the rear brake unit.



Backing plates added to all brake calipers and the moulding recesses in the front fork stanchions filled in and rubbed down.

AIRFIX MAGAZINE — PAGE 461



At this stage the model is well underway; note the large chunk removed from the upper silencer to facilitate fitment of the seat unit.

Stage 12 Handlebars and Instruments

Twin holes should be drilled just beneath the throttle grip (C6) for the ever necessary throttle cables which pass between the fork stanchions and disappear underneath the petrol tank where most cables seem to end. Instrument decals should be closely trimmed off backing film, otherwise they won't fit the moulded recesses of the instrument panel. If you're really keen, you can paint out the individual needles on the instruments, because we're modelling a machine in motion, and paint in new ones further round each dial. When dry, the dials can be covered with a generous blob of gloss varnish.



Details of cabling and wiring around the head-stock and forks. Note especially the wire guide for the tank's breather tube.

Stage 13/14/15 Petrol Tank, Seat Unit and Fairing

Leave the transparent screen (A4) off the fairing until all painting and decalling is complete. I found it best to rub down the raised lines denoting paint demarcation on all three assemblies and use masking tape for a more sharply defined finish. When lining up masking for the red areas, ensure that the lines flow from fairing to tank and from fairing to seat unit as they should.

With the red sections painted and dried, turn to the three number plates for the fairing. The nose plate is always a difficult job on any racing bike. It's even worse than usual on the OW70 because of the extra hand-guards projecting across the nose. I followed my now standard practice of trimming the black edging off this particular decal, abandoning the yellow section, and applying the resultant separate stripes followed by hand-painting the yellow area in. The side number plates were applied in a normal manner but then painted over to ensure that all three matched in colour. Once this paintwork was well dry the fairing was gloss varnished and all remaining decals were added. The seat and tank were fitted to the bike but the fairing was only added after the rider figure had been completed and glued in place.

Stage 16 Front Wheel

This needs the same treatment as the rear wheel. The brake discs should have all features filled and sanded as with the rear brake and the completed assembly has to be left off until the fairing is fitted.

Figure Construction

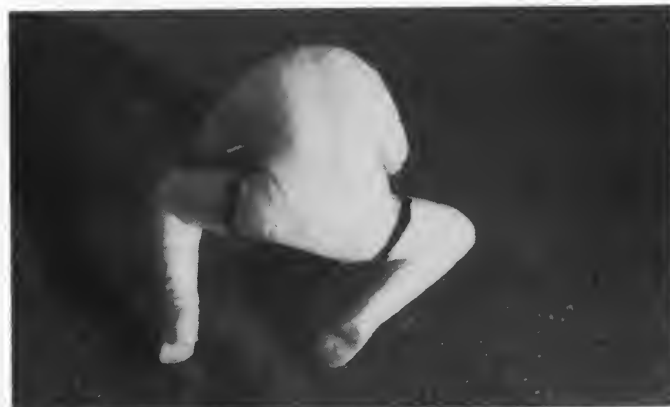
This cornering figure was originally designed to fit the earlier YZR500 model so it should come as no great surprise to find that it needs a little judicious modification before it fits the OW70 satisfactorily.

Begin by gluing the various sub-assemblies together: each arm, each leg, torso, and head. Then, clean up the joints on each of these as leaving this work until the whole figure is together makes things really difficult. Fix the sub-assemblies to one another with the figure actually on the bike. You should find that the arms/hands will grip the handlebars well enough but the

feet will meet neither footrest.

Once this second stage of construction has had adequate time to dry out each leg must be cut off near the torso and re-positioned. Work this out for yourself, again, by seating the figure on the bike. I found it additionally necessary to remove the left foot by cutting through at the top of the boot and gluing back in position turned slightly more inwards.

The helmeted head was left off and finished separately. Before painting the figure requires quite a lot of final filling and rubbing down. You may need to apply your patience here in order to do a thorough job.



Black lines around the figure's thighs indicate where sawing and repositioning have taken place.



Early stage of figure construction: here the right foot can be seen an alarming distance from the footrest.

Painting

I began with a typical grey undercoat. I checked all joint lines and sanded areas and then laid on three coats of red before I was satisfied. The white stripes followed this (in only two coats) making sure that there was width enough to accommodate the leg and back decals ('Marlboro' and 'Dainese'). The black edging came next, followed by seams and shading. The whole thing then was gloss varnished and decalled. My only problem came with the 'YAMAHA' on each forearm which are best cut into separate letters and applied with copious amounts of decal softener. When all was dry, a coat of semi-matt varnish (always best to simulate leather) was brushed on. Knee pads were made from an old cement tube and super-glued in position.

Finishing the helmeted head took a little more consideration. The eagle head motif looked to me as if it would not sit in place without crinkling badly even with decal softener, so I followed the idea of the fairing's nose number plate. I trimmed the black outline away from the white area, applied this edging, and then handpainted the white in, defining its bottom line when painting in the black area around the lower part of the helmet. Then it was gloss varnished, other decals added, and then gloss varnished one last time.

With the figure firmly in position the fairing can now be added, the front wheel screwed into the forks, and the transparent screen carefully glued onto the fairing. As a very last touch, I dirtied the figure up just a little around the legs and feet. In the end, while it seems to be a lot of excess effort, the results are quite pleasing.

Wayne Gardner and the NS500 Honda having been treated in similar fashion to the brace of Roberts Yamaha models.



JUNE 1989



KR in an earlier incarnation astride the yellow and black Yamaha 500.



E.D. Models



SHOP/MAIL ORDER: (Dept AX), 64 Stratford Road, Shirley, Solihull, West Midlands B90 3LP. Tel: 021-744 7488

NEW

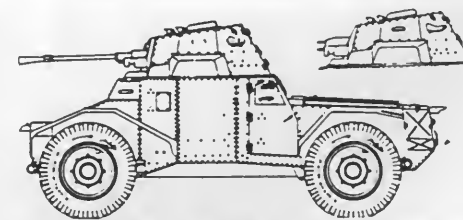
ARMOUR RESEARCH DETAIL PARTS FOR TANKS

BRASS ETCH PARTS
ARC-1001 Head, Teelight, Periscope end Siren Guard Set Sherman Tank £3.46
ARC-1002 Gun Barrel Rifling Kit £2.72
ARC-1003 Engine Deck Vent Screens, Tiger I £5.99
ARC-1004 Engine Deck Vent Screens, Tiger II £5.99
ARC-1005 Engine Deck Vent Screens, Jagdtiger £5.99
ARC-1006 Engine Deck Vent Screens, Panther A £5.99

WHITE METAL PARTS
ARC-2001 Canter Road Wheel Set, Panther Jagdpenther 20 piece £4.50
ARC-2002 1/24/25 Scale 88 mm German Tank Ammo 12 piece £4.50
ARC-2003 German 88 mm Tank Ammo 1/35 scale KWK 41/43 PAK 41/43 20 piece £4.50
ARC-2004 US 75 mm Tank Ammo, 20 piece £4.50
ARC-2005 105 mm US Howitzer Ammo 20 piece £4.50
ARC-2006 US 75 mm Ammo Storage Tubes 20 piece £4.50
ARC-2007 105 mm US Howitzer Ammo Storage Tubes 20 piece £4.50
ARC-2008 German 88 mm Tank

Ammo, Single Round Wood Boxes, 12 piece £4.50
ARC-2009 US 90 mm Tank/Anti Tank Ammo HVAP 20 piece £4.50
ARC-1007 Engine Deck Vent Screens, Panther G £5.99
ARC-1008 Engine Deck Vent Screens, Jagdpenther £5.99
ARC-1009 Tie Downs, US W/Straps and Buckles £3.45
ARC-1010 .50 Calibre Machine Gun Credle Mount end Accessory set £4.75
ARC-1011 US .50 Cal. Ammo Box Set £5.20
ARC-2010 90 mm US Ammo Storage Tubes, 20 piece £4.50
ARC-2011 88 mm German Tank Ammo, KWK 36 Tiger I, 20 piece £4.50
ARC-2012 88 mm German Ammo, Flak 18/36 20 piece £4.50
ARC-2013 US 76 mm Tank Ammo, Shot AP M29, 20 piece £4.50
ARC-2014 US 76 mm Ammo Storage Tubes, 20 piece £4.50
ARC-2015 US 76 mm Tank Ammo, Shell, HE M42A1, 20 piece £4.50
ARC-2016 German 75 mm Tank Ammo, KWK 40 Panzer IV F2/J, 20 piece £4.50
ARC-2017 US .50 Calibre Machine gun Ammo Boxes, 12 piece £4.15
ARC-2018 German 75 mm Tank Ammo, KWK 42, Panther ADG, 20 piece £4.50

TRADE ENQUIRIES WELCOME
WE ARE EUROPEAN DISTRIBUTORS



ALBY 1:35th Scale Injection moulded Panhard AMD 178 £12.99
New injection moulded armoured car from Alby. Total 35 parts, excellent detail. Choice of eight different paint schemes; French 1940, 42 German 1941, 44. Also choice of main armament cannon or MG. Remember this is a steel tool moulded kit.

AIRWAVES 1:72nd BRASS ETCH

AC-7205 A-6E Tram. Total parts 53
Includes instrument panel, full side consoles, rudder pedals, canopy mirrors and slide rails. Ejector seat harness, pull handles, seat adjustment control knobs, ferry tank fins and fully perforated airbrakes. Price: £4.99

AC-7206 Martin Baker Ejector Seat Harness 1980s.
Includes six complete seat harnesses for Martin Baker ejector seats. These have buckles and straps etched together for accuracy and ease of use. No more threading masking tape into small holes. AIRWAVES seat harness can be used on all modern RAF ejector seats and for all countries who use the same style harness, i.e. Israel. Price: £3.99



POSTAGE ON DECALS AND PHOTO-ETCHED PARTS — UK
Up to £4.00 £0.30
Over £4.00 FREE

POSTAGE UK
Up to £3.00 £0.60
Up to £10.00 £1.50
Up to £25.00 £2.00
Over £25.00 FREE
Send 3 x 19p stamps for our catalogue.

Overseas customers (Incl Eire) please add 35 per cent to cover Surface Airmail extra (approx 40 per cent). Overseas and BFPO deduct VAT at 13 per cent. Books zero VAT rated.



G.I.S IN 'NAM

THE roots of the US participation in the Vietnam War go back to 1954, when the former French colony of Indo China gained its independence. It was the communist Viet Minh armies that defeated the French with their leader, Ho Chi Minh, bitterly resenting the partition of the country in to the communist North Vietnam and the Republic of South Vietnam. Almost at once, bands of pro-communist guerrilla's, calling themselves the Viet Cong (VC), began to infiltrate the remote southern mountain areas. These troops were joined by dissidents from the big cities of South Vietnam and 'recruits' from the villages under their control.

The Army of the Republic of Viet Nam (ARVN) was not up to suppressing the VC's infiltration. The senior officers gained their appointments by patronage while graft and corruption were commonplace. The troops themselves were also poorly trained and equipped. American military advisors were sent to try and improve ARVN performance, but the VC continued to gain ground at an alarming rate. The early 1960's saw some spectacular defeats inflicted on the ARVN culminating in

the capture of Binh Gia just outside the capital Saigon in 1965.

The American forces in South Vietnam were expanded in 1965, with the Americans taking over some of the larger bases to allow more ARVN troops into the field. This move is regarded as the start of the 'Vietnam War' proper, which was to last until American forces were withdrawn in 1973. The first American troops to see action were the Special Forces or 'Green Berets' and the US Marines, both of which remained highly offensive in nature for the entire campaign. At first the US infantrymen were used to support the ARVN, but it soon became obvious that if any progress was to be made, then the US Army must take to the field itself. The Americans did their best to internationalise the war by pressuring their allies to join in the fight and some Korean and Australian units were sent, but the British flatly refused to support the war in the south in any active way.

During the first few years the US Army fought well, inflicting heavy casualties on the VC and the North Vietnamese Army (NVA), which

began to supplement the VC in increasing numbers. Fire Bases were built in communist held territory and steps were taken to win over villages away from the VC. But as the war escalated, morale became a major problem. While the Americans were winning battles, there was no end of the war in sight and no policy for defeating the North Vietnamese was forthcoming. At home the war was a symbol of protest for the hippies and radicals while the press remained consistently hostile to the Government. In 1967 the communists mounted a major offensive to defeat the Americans and South Vietnamese. Even though the battles dragged on well into 1968, with the so called Tet Offensive, the NVA and VC were defeated with heavy losses and retreated back into the jungle to carry on a war of attrition. The NVA and VC wanted to inflict the maximum number of casualties on Americans, hoping that public opinion in the West would give them final victory by bringing about the withdrawal of US forces.

This policy completely changed the war, and through the year of 1969, the Ameri-

A relaxing moment for two 'grunts' on patrol.

cans found themselves fighting defensive battles, with the communists attacking vehicle convoys and isolated outposts, rather than the cities, as they had done in the previous two years. The communists received the vast majority of the casualties when in combat against American troops, but did have some successes against the ARVN. Politically Vietnam was an embarrassment to the American government and the growing feeling among the people was that US forces should be returned home as soon as possible. The solution to removing the troops, while at the same time retaining some honour, was the 'Vietnamisation' of the war. From 1970 American forces were slowly reduced in number as units in the field were replaced by ARVN and RVMC (Rep Vietnam Marine Corps) troops. But at the same time, the war was also expanded, as ARVN and US troops crossed the borders of Laos and Cambodia to try and shut off the supplies coming down the Ho Chi Minh trail to the south. Contact with the NVA and VC grew less, possibly due to the communists not wanting to agitate the Americans into changing their policy to quit the war. The NVA and VC simply slipped out of the nets that had been cast for them.

Trail is a word that hardly describes, the network of dirt roads and tracks which ran south through Laos and Cambodia as in some places it was 30 miles wide. All the attacks and bombings did little to stop the flow of supplies. As one section was hit, the supplies were routed through another. The NVA and VC hit back at Fire Bases that were still being built and inflicted a major defeat to the ARVN during the Lam Son 719 offensive against the Ho Chi Minh trail near Tchepone. During 1971-73 the US forces returned to the advisory role with officers and senior NCO's being attached to ARVN units in an effort to increase their combat effectiveness. In the end, all the effort proved fruitless. Even though armed with the most modern weapons the American taxpayer could provide, the ARVN were defeated in the Spring of 1975 and the Republic of Vietnam ceased to exist.

WEAPONS AND EQUIPMENT

Before 1965 American advisors were armed with a variety of weapons, some of which dated back to World War 2. The standard side arm was the Colt

.45 automatic pistol, the finest pistol of its type ever built. I owned an ex-US Army Colt for over ten years and in that time it never failed once, despite the variety of ammo put through it. Most soldiers carried the M-2 Carbine, a much more manageable rifle in jungle conditions than the later issue M-14 automatic rifle. Knives were carried by Green Berets, usually M-7 bayonets or privately purchased hunting knives.

Troops arriving in 1965 were armed with the NATO M-14 7.62mm assault rifle and M-60 machine guns. Older weapons such as the .30 cal Browning MG and the heavy M-2 .50 cal Browning were also used for static defence. Some CAR-15 and AR-15 5.56mm automatic rifles were also in use by Special Forces in small numbers. These rifles were early variants of the M-16 which was in widespread use by 1967 because of its light weight. The M-16 had the look of a toy, the metal parts were either parkerized or anodized, giving it a mid-grey colour and the furniture was made in dark grey plastic. It was fragile and early models were prone to jamming, but it was a powerful weapon, easy to use. It, and its ammunition, were much lighter than any other weapon in its class. The M-16 used the M-8 bayonet and this had the same blade as the M-7 but the handle was of a different style.

As well as the normal small arms, combat shotguns were used firing heavy buckshot, each ball of shot having a similar diameter to a rifle bullet. The 5-shot Remingtons and Winchester with pump-action were most common. The M-79 grenade launcher could fire grenades, smoke, or gas canisters as well as a buckshot round. In addition to the small arms mentioned, elite units such as the Green Berets, LRRPs, SEALs, and Marine Recon all carried more specialised weapons. These included the 9mm Browning Hi-Power pistol, Smith & Wesson M-10 38spl revolver, AK-47 rifle, silenced M-16, silenced Hi-Standard .22 pistol, XM-148 (M-16/M-79 combo rifle), and the Remington 700 sniper rifle. Knives were usually the Camillus or K-bar 'USAF Pilot Survival' the USMC 'Fighting Knife' (Camillus) or privately purchased hunting knives for those who had the funds to spare.

UNIFORMS

THE OG.107 fatigues and Class

Two GIs in 'Boonie hats' and 'Cammo' fatigues.

A service uniform were the most common dress for American troops during the 1965 to 1967 period. Special Forces, LRRP's, and other elite units preferred to wear camouflage clothing when in the field. This was unavailable through normal supply channels, but most of these troops did get camouflage uniforms of one kind or another. Korean and ARVN cammo uniforms were readily available for the soldiers who could squeeze into them. This was a 'Tiger Stripe' pattern or a blotch, referred to as 'Leopard' or 'Duck Hunter'. Camouflage cloth was available at many of the small street tailor shops, so soldiers had no trouble purchasing uniforms to order. These were cut to the same pattern as the Class A combat uniform or OG.107 fatigues. The US government were not slow in realising the advantages of the camouflage uniform and the Class A was made in 'Leaf' pattern from about 1967 onwards. This was issued to both army and marines from about mid-1967 and soon replaced the Tiger and Leopard uniforms. Black VC 'pajama' uniform was sometimes worn by elite units when hunting down specific targets behind enemy lines. Light flack jackets were introduced in 1967 and were worn at all times by many soldiers to protect against mortar rounds which could be encountered at any time. The US Marines had them, but many chose not to wear them, even in combat. Apart from the steel helmet, most soldiers wore the Utility Cap, similar to the 'baseball cap' when not in combat. The

'boonie hat' or beret was preferred by elite units, both were found in several colours and styles.

THE FIGURES

The first vignette shows two LRRP's (pronounced Lurps) from the 74th Infantry Detachment (LRP), which was attached to the 173rd Airborne Brigade. The date is early 1968, when the 'Herd' was operating out of An Khe in the central province of Binh Dinh. The first man carries an AK-47 assault rifle and is wearing a 'Jones hat'. The uniform is the private purchase 'Tiger stripe' much favoured by elite units. He carries a USAF survival knife fastened to the yolk of the M-1956 webbing. The backpack is also private purchase. The second man wears the new 'leaf' pattern combat suit and a 'Boonie hat', which had a wider brim than the 'Jones'. He carries the M-16 rifle and M-7 bayonet, along with two fragmentation and two 'Willey Pete' white phosphorous grenades. LRRP's carried out long range reconnaissance patrols usually staying in the field for 6 to 8 days at a time. Teams consisted of six soldiers with a senior NCO or Officer leading, though rank was not considered important, it sometimes happened that NCO's commanded patrols which had an Officer on loan to other units.

The second vignette features two infantrymen dressed in their light flack jackets as they relax at base camp. The Officer has just come back from a patrol, carrying both

Colt .45 pistol and M-16 rifle. He carries a minimum of equipment and in his helmet band he carries insect repellent, cigarettes and field dressings. On his pistol belt he carries a water bottle and magazine pouch, the combat trousers are the Olive Green type worn 1965-68. The black GI is wearing OG.107 fatigue trousers and OG vest under his flak jacket. In his hand he holds a utility cap the most common headwear for the ordinary infantryman. The personal weapon was always within easy reach, even in base areas.

The figures are Tamiya in the case of the LRRP's, with Verlinden additions and Italeri weapons. They are from the M-113 ACAV kit and are some of the best animated figures I have seen in this scale. Verlinden produces several figures of the Vietnam war period and the base camp figures come from the multi-pose set no 393. Some of the figure heads in this set portray the Hollywood image of the soldier in Vietnam and are a little too much over the top. There is no doubt that standards deteriorated as the war progressed, but most soldiers dressed and behaved within reason. Most units had few problems, while others such as the Americal Division gained a reputation for trouble in its base areas due to poor discipline, but in the field, soldiers wanted to survive and maintained good order.

The Verlinden figures were supplied by LR Models who carry a large selection of figure kits.

Paul Woodman



BACK TO BASICS



FILING AND CUTTING

Alan W. Hall looks at various ways of using files and the best sort of knife for plastic modelling

THERE are two basic requirements in any tool kit. These are for shaping and cutting plastic and although I may make a number of suggestions in the next two pages about the tools I have used successfully in this manner, there are several others which can do the job equally well. It's just a matter of taste and I admit to prejudice in a number of cases.

I dealt with wet and dry paper several issues ago and mentioned in passing the use of files. These are basically suitable for concentrating ones shaping of plastic to a smaller point than would be possible with a sheet of wet and dry. We use files to clean off flash from the sprue in difficult places where it would be impossible to clean up using wet and dry paper, difficult joint lines can be cleaned up using a file such as the area round a nacelle which cannot be reached by any other method and we can easily enlarge a hole in a piece of plastic say when there is need to open a window position in the fuselage or improve on some small item in the model's undercarriage.

It would be almost impossible for me to give specific ex-

amples of how to use files as this perhaps comes before even the 'basic' in this column's title. But there are some basic parameters in choosing a file for a certain job and this will in turn give an idea of how many will be needed for a reasonably comprehensive selection to deal with most tasks.

Firstly one needs a fairly large, coarse file, the type that the builder's merchant will sell you. Its use is for large areas of plastic or wood which need shaping down from a rough cut outline and reducing the material into its final shape ready for finishing off by means of sandpaper or wet and dry paper. As an example of this I could mention the way in which I often extend a fuselage length if making a conversion to a kit. After having cut the fuselage at the appropriate place I then usually use balsa wood to make a suitably sized insertion, sticking both parts of the plastic fuselage together on each end. After this has dried out thoroughly I use a knife and a large file similar to that described to shape down the wood before reducing it even further to the finite shape with less crude methods such as sand or

wet and dry paper.

JEWELLERS FILES

Many model shops will, nowadays, be prepared to sell you a set of jewellers files which have very fine teeth and are normally used as the name suggests by metal workers engaged in shaping small items such as rings before polishing the result ready for show or sale. When I started modelling this was unheard of and I obtained my original set of files many years ago in Hatton Garden, the gold and silver-smith's area of the City of London. I still have these files and having looked after them with TLC (tender, loving care) for all this time, they are still as good as new.

They came in a small pouch which is a very useful holdall to keep them clean after use and in one place. How many times have I cursed the loss of a file which has been covered by other materials on the workbench when I have not followed my own maxim of putting a tool away immediately after use. The holdall, even if you have to make one yourself, is an important accessory to the vital criteria of looking after your tools of the trade because if you do, they will look after you and for a long time to come after the original purchase.

Files and knives. Shown completed with their holdall are the files used by the author for modelmaking purposes. Eight different types are illustrated including two flat files, a 'V' shape, circular and half round. In the background can be seen a packet of five Swann Morton scalpel blades, the scalpel itself and a Stanley knife blade.

How many files do you need? To begin with you need about four to five of which there are two that are essential. The flat file with teeth on both sides of the blade is of great importance. If you only have enough cash to buy one go for something that is about a quarter inch in width, I have several of these which vary in size as you will soon find the necessity of this when cleaning up a kit before getting it ready for assembly.

The other essential is a fully circular file. Again I have several widths as this is essential in enlarging a hole for a cabin window for example or making any one of a dozen different holes that a drill is too small to produce. By either making a pin or drill hole first and then working the file round and round you can obtain a perfectly circular hole where and when required. There are many examples that one can think of especially if you get into scratchbuilding eventually or conversion work. Those who build vacuform models will join

me in stating that both these sorts of file are essential when making this kind of model though as this type of work is outside the requirements of this column, I will leave the subject there until another day.

OTHER SHAPES

Other shapes of file that I have in my collection are a triangular cross-sectioned one and what I call a half-round. Not being sure of the exact trade terms to describe these, I will use my own descriptions which should sound somewhat right to the shopkeeper when asking for your own. The former is always useful as it can cut 'V'-shaped indentations when needed, particularly useful when scratchbuilding. The half round has one flat side and the other circular. No specific use springs to mind for this type of file but I find it useful for many a job of a general nature when this tool is exactly right for the job.

When I come to think of it there can really be no specific job for any of the types of file mentioned. They are all useful and there is a variety of ways in which your modelling can be improved or at least made easier with a good set of files. Personally, I'm lost without mine.

CARE OF FILES

Mentioned earlier was the fact that I bought my original set of files many years ago and in spite of a couple that have been lost along the way I still have these and they are as good as new.

But files get dirty easily when in use against plastic or wood. The fine teeth clog-up and the file becomes inefficient as a result. How can one clean a file?

Generally speaking it is only necessary to give the tool a sharp rap against the edge of the bench and the material clogging the teeth will fall away. But after a while it gets so ingrained that something has to be done about it.

Not so long ago I was sent a small tool for review that has since found other uses. The original idea was that it could be used for polishing up cast metal parts that are nowadays in common usage amongst vacuform, resin or even in a number of the recent hi-tech kits. Yet on looking at it I was able to find another use in the way in which it so quickly cleaned up my files.

The tool consists of a nylon brush with small short hairs which polish metal very satisfactorily and at the same time, get all the tiny filings that could not be removed from the file

without a painstaking clean-up by hand and a cocktail stick to get between the teeth. The nylon brush made a wizard file cleaner and I thoroughly recommend that you get one of these dual purpose tools.

FLEXIFILE

I could not complete this part of my column without mention of a comparatively new invention that has, in many cases, superseded the common or garden file. Of American origin and imported into the UK by Aeroclub Models of 5 Silverwood Avenue, Ravenhead, Notts BG15 9BU at a price of £3.95, it is a very simple idea that one wonders why nobody thought of it before.

Consisting of a 'U'-shaped piece of metal roughly four inches square, a thin piece of wet and dry paper is inserted between the ends of the 'U' frame which is held in tension thus forming a flexible file surface.

The greatest use of the tool is for curved surfaces where a piece of wet and dry paper cut from the sheet is too large and a file to rigid to form the required shape. It is ideal for rubbing down the joint line on an aircraft's spine whilst still maintaining the shape, for getting round those intricate parts of an engine nacelle or for quickly cleaning off flash from the parts of a model before assembly. In other words it is as the name suggests, a flexible file.

The pack comes complete with six sorted abrasive bands of three different grades. Replacement packs for these can be bought for 99p each.

Since taking the Flexifile into use some two years ago I've wondered how I have managed before its coming. The work of cleaning up a model and especially in conversion modelling has been greatly eased and I think you will find that there are few modellers nowadays who have not invested in one of these once its usefulness has been discovered.

KNIVES

No modeller can start work without the use of a knife. There are many different types on the market but most of us prefer to use the disposable blade scalpel similar to that used in hospitals. It has a variety of different sizes and shapes of blade but I, like most others prefer one particular shape which has a straight cutting edge and a point.

Swann Norton who regularly advertise in several of the modelling magazines are a useful source for good

scalpels. Their address is Penn Works, Owlerton Green, Sheffield S6 2BJ and many of the good mail order model shops hold stocks. The type of blade I use is a 10A and they come in packs of five. The company say that the recommended retail price of the scalpel handle is £1.02 and blades cost £4.19 per 100 but I am sure that your model shop will sell you a pack of five for a slightly lower price.

Personally I find that the scalpel is ideal for my own purposes because in most other cases the balance of the knife is wrong, possibly because it has a plastic handle or there is a screw holder for the blade that gets in the way making it difficult to use.

There are thousands of jobs for which a knife can be put in plastic modelling. From the cutting of the various parts from the sprue to cleaning up and even cutting decals from the backing paper, the knife comes to hand immediately. They therefore need looking after very well and I find that changing the blades regularly is the secret to avoiding cut fingers or other aggravation. Remember a bad workman always blames his tools and in this case a blunt blade can create poor results. The blade itself can snap and there can be some serious cuts made on the hands or elsewhere. Always try to keep the knife clear of an untidy bench. All of us get in a mess now and again with paints, plans and parts all mixed up together. Clear the bench regularly and watch where you put the knife. Always dispose of used blades after use. Wrap them up before throwing them away or else somebody else might get a severe cut when sorting out the rubbish in the bin. I more or less always put mine in an old tobacco tin as sometimes a used scalpel blade can be of use for scraping down a joint line or some similar job where the blade I normally recommend for this work is too large.

STURDY EQUAL

Having said a scalpel is essential, I find that there are times when a more sturdy knife is required. Although not part of my brief for this column you will find that when you set about making your first vacuform model that a heavy guage blade is necessary. The blades of this sort of knife are also very useful for scraping down a joint line in the first instance before using the Flexifile or wet and dry paper.

For this purpose I always use a Stanley knife. All builders merchants sell them especially

stores like Texas where you can buy a handle and blades for less than £3.00.

Nowadays the short run injection moulded kit is prevalent and many people have bought these as a result of recommendation in the review columns only to be surprised at the thickness of the sprue against one of the ultra refined Japanese kits. They get upset when they break the part off the sprue taking part of the essential wing or fuselage shape as well. To cut these parts off the sprue it is best to start with the Stanley knife and if this will not work use a fine toothed saw.

Stanley Knives and Swann Morton scalpel handles will last for ever and need no maintenance. I have already mentioned the frequent changing of blades in each but there is one other safety factor which ought to be mentioned. That is the carrying of knives if you ever have to leave the workroom and take a knife to a show or to work somewhere other than at home. Never walk about with a knife where the blade is pointing forward from your hand. A slip may cause an accident and here I talk from experience. I did it once and it resulted in a nasty gash in the tummy which I had to have stitches and took a long time to heal. If you have to carry knives in your tool box wrap them up first in a paint rag or something similar. The points of the blade will not suffer and it will be safer that way. Never try to sharpen a Stanley or Swann Morton blade. It just cannot be done so buy a new blade, it is quicker and cheaper in the long run.

BASIC ESSENTIALS

Both knives and files are basic essentials for any modeller no matter how junior or inexperienced. They are the first tools one should acquire apart from some form of wet and dry or sand paper so the selection is worth considering carefully as if you are to go on with the hobby then these two items will be required every time a model is made and will need to last a lifetime.

I have given my recommendations as to the types of file and the knives I find the most useful but be aware that there are many others on the market and they are worth a small investment now and again if one is to keep ahead of progress. The Flexifile is one example of a new invention becoming available and now within a comparatively short time, an essential part of the tool kit.

Do not be afraid of experimentation but at the same time always look after your tools and keep them in good order. ■



AIRFIX KITS A RECOLLECTION

I DECIDED to ask an individual totally devoid of interest in modelling of any shape, form or size, to name a company that produced a range of plastic kits. He replied, quite without hesitation, 'Airfix!'. The fact that Airfix has become a household word even among non-modellers is a small indication of the impact that this concern has had on the world. What follows is an appreciation of the contribution by a dedicated aircraft modeller to the hobby of scale aircraft modelling of all that Airfix have done for those who share my interest. I have little doubt

that many of you like minded souls have your own ideas of 'kit milestones'. Please join me on a pleasant stroll through polystyrene history and we will note together one company's 'Milestones For Aircraft Modellers'.

WHAT'S IN A NAME

The name Airfix, as regards plastic kits, is a household name, and though a company primarily associated with aircraft kits, their first kit came in 1948 which was a Massey Ferguson tractor. Its raw material came from ground-up

fountain pen bodies! It was not until 1952 that their first 2s 0d kit, packaged in what was to quickly become a familiar sight to all, the plastic bag with a simple paper header card, appeared. This kit was Sir Francis Drake's ship, *The Golden Hind*. It was a spectacular success and yet when a kit of the Spitfire, a Mark I, was proposed, Airfix's management were hesitant. In the end, they went ahead, releasing it in 1953. It proved a phenomenal seller and it was this simple product, containing a mere 15 parts moulded in a pale blue plastic, that became

A rare Hawker P.1127 in the familiar Airfix polythene bag.

the grandparent of all the Airfix aircraft kits we know so well today. It also established Airfix's policy of re-tooling/re-releasing kits, for in 1955 that kit was updated to a Mark IX, subsequently undergoing several package changes right up to very recent times until being supplemented with totally new Mark I and Mark Vb kits. I well recall the magnificent Roy Cross rendition of 'Johnny' Johnson's machine, coded JE-J, atop a fluffy cloud-scape, that decorated the plastic bag's header card and, eventually, Airfix's award winning bubble-package. The kit is now available in the latest 'Aces Series' box.

In 1956 there came a flourish of aircraft kits that were to become a firm foundation for things to come, these being the Bf109G, Lysander, Bristol F2b, Gladiator, Hurricane IV,



The 'old' Airfix Magazine at 1s 6d.

and Westland S55 (in BEA colours). Some of these deserve special mention such as the Bristol F2b in particular, for here was Airfix's first World War I aircraft. It was simple yet accurate and even today in the hands of a capable modeller, it can rub shoulders with and maybe overshadow the best from other manufacturers. I well remember my elder brother building this kit in 1960 in Exeter and an excellent job he made of it. My first kit was Airfix's 1:72nd Scale Bf109G. I expended a whole tube of cement on that simple kit, yet build it I did, going so far as to spill most of the water for the transfers on the living room table, much to my mother's consternation and father's amusement!

THE WESTLAND S55

1956 also brought Airfix's first helicopter, the Westland S55. This was almost quaintly simple but it became a good seller. How many of you, I wonder, recall that its sole interior details were but two 'shelves', one in each fuselage half, upon which were cemented the crew, whilst there were no transparencies whatsoever through which to view them. Later in 1966, that simple kit succumbed to some incredible re-tooling to produce an excellent replica of a Whirlwind HAR Mark I, in the red and blue scheme as worn by the machine based aboard the

Royal Navy's *HMS Protector*.

1957 saw Airfix truly establish their range of World War I aircraft kits with the release of the Sopwith Camel, Fokker DR I, Albatros DV, and RE8, all of which are available again today in the company's 'Special Interest Series', proving the longevity of these products. My father bought me a Hawker Hart which was later re-tooled into the Hawker Demon. Today the Hart, in its original form, is a true rarity, and anyone with a copy has a real slice of modelling history on their hands, yet 1957 did not stop here as Airfix also released a Mosquito FB Mk VI.

Still available today the Mosquito then was a very welcome subject and widely acclaimed by a vast following of modellers who virtually could not wait to get their hands on it. True, it was not as sophisticated as today's offerings, yet it was an important addition to their fledgling Series 2, which for me represents the company's most important series of aircraft kits. The Supermarine Walrus was also added in this year, while 1958, just around the corner, promised and delivered something really special.

THE DAM BUSTER

No. 617 Squadron, in May 1943, turned the Lancaster into a legend with their attack on the Ruhr dams, and Airfix, in 1958, paid plastic tribute to Roy

Chadwick's greatest achievement. In series 5, costing 7s 6d (37½p), this kit was a magnificent effort, containing as it did, all manner of working parts from elevating guns to moveable controls. However, it was not these features that proved such a boon, it was the simple fact that for the first time, here was a 'big' model in every sense of the word. Its box of 100 plus parts provided the raw material for various conversion projects whereby modellers would 'borrow' nacelles for Merlin engined Beaufighters and wings for Yorks whose fuselages, before the advent of the conversion kit, would have been painstakingly fashioned from wood. There were even instances where the entire model, with a lot of rework, was turned into the Lancaster's twin engined predecessor, the Manchester. The success of this entry into larger models provided Airfix the impetus to produce larger and even more ambitious kits.

This same year saw Airfix produce their first jet aircraft, the MiG-15 and the SR 53 research machine.

1958 also saw the Wellington, a Mark III, appear in series 4 for 6s 0d. (30p). Like the Lancaster it was moulded in black, also boasting numerous working features, and even today is one of ONLY two readily available 1/72nd scale kits of this famous bomber, another offspring of the brilliant mind of Sir Barnes Wallis of 'bouncing bomb' fame. Perhaps it is understandable that the only other kit of a Welly is by Matchbox, a Mark IX. Who knows, perhaps Airfix might decide in the future to substantially re-tool their MkIII old product and release a replica of my favourite version, the Mk Ic.

This same year saw many other aircraft kits appear, two of which, for me, are real gems given their then incredible accuracy coupled with simplicity, helping modellers create replicas, these kits being the Auster Antarctic and the already mentioned Bristol Beaufighter. The former underwent a substantial rework in the late seventies to produce the AOP6 version, yet for me the most memorable period of this kit's history was when Roy Cross's artwork portrayed the machine flying across a frozen seascape, its brilliant yellow scheme contrasting sharply with the chilled blue and white of the Antarctic, the aircraft's namesake. The Bristol Beaufighter, though, is even more special to me, as I intend to build and detail it for this very journal at a later date.

1959

The first 'big' Luftwaffe machine appeared at this time, in series 3, this being the Dornier 217E costing 4/6d (22½p). This Do 217E was, for almost 20 years, the sole rendition of this machine until the advent of Italeri's version. Airfix's product is significant to me in that it was the first large kit I ever attempted to build, albeit with a lot of help from my elder brother, way back in 1962. However, that same year, 1959, Airfix released one of their most magnificent kits, and it is a product that has stood the test of time extremely well, providing enjoyment today for modellers who were not even born when it first appeared. The kit is the Short Sunderland.

Another rare prototype bird, the SR.53.





This kit is a firm favourite of mine and it resides at present in one of my cupboards, in two guises, its present day package with a photo of the model on the box and the older one with the colour painting on the top. It is a painting full of life bringing vividly to mind RAF Coastal Command's old adage of 'long periods of boredom broken only by moments of sheer desperation'. The kit was complicated for its time and Airfix's largest aircraft so far attempted and very clearly moulded. This landmark issue remains the sole kit of this magnificent flying boat. Dispensing with the familiar stand, for the first time, Airfix catered for the display fanatic by providing the aircraft's beaching gear, thus saving a lot of scratchbuilding on the modeller's behalf.

Two more much sought after kits today were released in 1959, these being the Fairey Rotodyne and Bristol Superfreighter, now exchanging hands for sums well in excess of their initial 6/- (30p) and 7/6d (37½p) retail prices. They were both good kits, and illustrated even in Airfix's early days the company's willingness to venture into the truly unusual. The Rotodyne, incidentally, built up into a very good model indeed and is a kit I wish I had today. I do, however, have the Superfreighter.

1960 and NEW ARTWORK

Complexity had, by now, become almost a byword with regard to the company, this even finding its way into what today would be a VERY adventurous choice of kit subject, the Boulton Paul Defiant.

A revolving propeller and turret with elevating guns were present in this, a Series 1 kit retailing for 2/- (10p). It is the ONLY Defiant ever likely to be produced and, consequently, well worth having to build as a replica of this unusual machine. For reference, the RAF Museum at Hendon has a real one on display.

1960 also saw one of Airfix's most popular kits appear, a delightful replica of Douglas's legendary DAKOTA, or C47 if one is a USAAF/USAF enthusiast. How many of you I wonder, recall this 6/- (30p) kit's initial release with, apart from USAAF transfers, markings for a machine of Silver City Airways? The Dakota was a milestone for me in so much as it was the first time I saw a natural metal finish applied to a model at first hand by my elder brother. He produced a most handsome replica using a now unavailable brand of Woolworth's bicycle aluminium touch up paint. It came in a blue and red tin for those of you with good memories, and it only cost 1/6d (7½p)!

For kit releases in general, 1961 was a good year for Airfix, yet in terms of new aircraft only three kits appeared. All were important for very contrasting reasons; the Halifax, in series 5, was the firm's third RAF bomber, and second four engined 'heavy', to be released, and its content and detail were far in advance of the earlier Lancaster.

The Comet 4B and Sud Caravelle were the first airliner kits in Airfix's Skyking series, in 1:144th scale, this smaller size being introduced to accommodate larger aircraft which, at this time, were impracticable. These two kits

again introduced us afresh to the company's attention to detail, for they boasted accurate outlines and quite nicely restrained surface detail. They paved the way for more civil aircraft, not only from Airfix but, later, a whole host of other companies. The Caravelle is particularly close to me as it was the very first civil aircraft kit I had a go at.

1962 was a special year for me as a plastic 'ancestor' appeared in the shape of the Hawker P1127. This very original kit, in Series 1 and costing 2/- (10p) was a neat, simple replica of the world's first true VTOL fighter, and Hawker all-rounders full access to their material. The result was a kit which, unfortunately, will never be available again due to the moulds having worn out. However, what this kit achieved, in 1:72nd scale, was precisely the same as its real life cousin in that it spawned four kits of the Harrier proper

The Series 2 Lightning now boxed with attractive artwork.

in the 60s, 70s and 80s, all of which won wide acclaim from both modellers and the RAF. The P1127 kit was very neat and the real thing also resides in the RAF Museum at Hendon.

This same year saw two more incredibly popular kits released, though one of them I did not receive until 1964 for my ninth birthday. That kit was the Boeing B-17G Flying Fortress, a complex and well detailed kit for the time and some might even argue that here was a kit way AHEAD of its time. Sales of this kit rose after Airfix commissioned the talents of Roy Cross for his artwork the later Series 5 Box.

Another kit from this bumper year, again a favourite of mine, was the Avro Anson I, a product that, again, was extremely accurate for its time. The Anson, like so many of its contemporaries, is still an excellent kit today. This kit, though a particular favourite of mine, is one I have built just once, and very poorly, very soon after its release in 1962, but I have made myself a promise to rectify matters in the not too distant future for it is, thankfully, one I still have in my private stock.

The Luftwaffe's most famous bomber, the graceful Heinkel He III, also appeared, in series 4, in the H.20 version, selected to include another moving feature, the turret. A year later it was all-change, packaging wise, for 1963 saw the simple, two colour headers and box tops bisected by red, yellow or blue stripes, disappear in favour of full artwork by the aforementioned Roy Cross, and I for one would dearly love to see such work return to grace the Airfix of the 1980s.

1963

The English Electric Lightning

The appearance of the 'bubble pack' saw the end of the 'baggie'.



JUNE 1989



Another oldie but goodie, the Beagle Basset.

FIA was a gimmick-free kit for 3/- (15p). However, I did not get the chance to build it for my elder brother swapped it with me for a less desirable kit. Big brothers! This year also saw the B17G receive a companion in Series 5. The B24J Liberator joined the growing ranks of Airfix bombers, surpassing in complexity yet again all that had gone before in polystyrene. I have a fond memory of this kit in that, after I had built mine, the neighbour's dog took a fancy to it and, thinking it was a stick, snatched it up from the floor as I was painting it.

1964

One of the best, and simplest, and cheapest kits was their Poland Gnat T MkI in Series 1, and for 2/- one received a quite splendid little kit. Moulded in silver it came with twelve 2.75" practice rockets, which were later deleted from its re-release as a machine of the RAF's Red Arrows aerobatic team. The kit proved beyond question that size, no matter how small, was no barrier to detail, which Airfix incorporated in abundance into three more kits, the Junkers Ju 88A4, Vickers VC10 and Consolidated PB5A Catalina.

Of the three the former was most welcomed by Luftwaffe enthusiasts, as it was the first of its type to 1:72nd scale. A great leap forward was accomplished in the release of the VC10, Airfix's largest airliner so far. A beautifully moulded kit, it went through several decal changes over a period of time while the original kit was in BOAC markings. Today several new parts have been added enabling the modeller to build an RAF VC10 K Mk 3 tanker variant.

The bubble pack was replaced by the small Series 1 box.

JUNE 1989

adventurous company, always willing to have a go where others would have cold feet. This is reflected in eight of their releases for this year, these being the Aichi D3A 'Val', Firefly Mk V, Commonwealth Boomerang, Mitsubishi Ki 46 'Dinah', Roland CII, Handley Page 42, Junkers Ju 52, and Bell P39Q Airacobra. Just selecting a couple of these then fine products as 'Milestones', is difficult at best, but for me one that does stand out is the Boomerang.

This kit is one I have built on many occasions, enjoying each as much, if not more than, the previous one, and happy to see it re-released so I may repeat the experience. Its 30 or so parts are an admirable fit and it is one of those small kits that lends itself so easily for superdetailing in that it has a large cockpit canopy and a radial engine, these providing enough inspiration to keep an ardent 'detailer' happy for many an hour. Also, the aircraft could be the centrepiece for an unusual diorama for followers, in model form, of the Pacific War, a most welcome change from the more usual diet of Zeros and Corsairs. The Boomerang is a welcome re-release in the current Airfix range, so again 'younger' modellers not born when it first appeared have a fresh chance to construct something unusual.

1965 saw, too, one of Airfix's finest products enter the market, and its series 4 (6/-; 30p) box art was truly dramatic showing a natural metal machine against red and orange sky. The B 25 Mitchell

was a worthy companion indeed to other American machines by Airfix and included within its 120 parts, a choice of three versions - a 'J', 'H' or 'J'-modified - which represented a significant step forward in kit design. As for detail it would have been difficult for a reviewer to pan this kit for it included a wealth of interior fittings and moving parts, whilst on the outside the rivetting was very subtle.

1966

Another absolute milestone in every sense of the word, from its magnificent box-top painting of a huge formation of these aircraft delivering their massive loads whilst repelling frantic onslaughts by a gaggle of Ki 84 'Franks' to the painstaking research undertaken by the company's designers who worked in close collaboration with the Boeing company in the United States. The kit, of course, was the B-29 Superfortress, released in series 7 for 12/6d (63p), and was Airfix's most ambitious aircraft project yet. It is a kit I well recall seeing in Woolworths' in Newton Aycliffe and wondering how long it would take to save my pocket money in order to buy it. Help was at hand, though, for my father, with me on that Saturday morning, enquired what I would like it for my birthday! I could hardly refuse such an offer, and still remember to this day spreading the 200 plus parts across the dining room table wondering just where to begin.

Available again today the



AIRFIX MAGAZINE — PAGE 471



The contents of the original Auster Antarctic baggie revealed.

B-29 is well worth having and, indeed, spending a long time over, as it still is the one and only 1:72nd scale example to hand, and will quite probably remain so given that it would take a brave manufacturer indeed to commit the colossal funds it would require to produce a similar tool at today's costs. In terms of production technique, research, accuracy, and presentation this single kit, for me, represents the very best of Airfix's 1:72nd scale products. 1966 did not stop here, for Airfix had still more adventurous surprises up their sleeves.

One such was the third of the RAF's 'heavies' in the shape of the Short Stirling, moulded in familiar black plastic and joining the Sunderland in Series 6. In actuality, though, it was two kits in one, for included in the box was the RAF's Universal Tractor to tow the four rather neat bomb trolleys that have, since the Stirling's release, graced so many RAF dioramas of all shapes and sizes. I remember this kit being extremely popular at school and I have little doubt that we pupils alone must have exhausted the shop's limited supply. I admit to having a soft spot for the Stirling as, for me, it is the most interesting (from a visual standpoint) of the RAF's four engined machines and I think this stems from the massive and complex main undercarriage so neatly portrayed in Airfix's kit.

1966 saw, too, the release to 1:144th scale of the prototype Concorde, this kit being later re-tooled to production standard and proving equally, if not more so, popular the 'second time around'. This kit was ambitious in itself because Airfix gambled on selling replicas of a machine that would, by the time it had entered service, have altered dramatically in configuration, this again illustrating the firm's courage in doing ahead where others

would hesitate.

1967

This year Airfix released the second of their Italian aircraft so far, in Series 1, this being the Fiat G50, following it later the same year with the Savoia Maachetti SM 79 tri-motor torpedo bomber in series 4. These were ambitious products in terms of the kit popularity stakes, but for me this year saw some other truly delightful releases that must rank amongst Airfix's most significant. These being the Avro 504K, Vought Kingfisher, and DH 4. I cannot choose a favourite of these three, for all were exquisitely detailed. The Avro 504K was delicately moulded, more so perhaps than the DH 4, but this latter kit really was a complex World War 1 replica, containing some neat bombs and racks to sling beneath its wings.

1968

Seven kits were added to the growing range and included the fanciful Angel Interceptor from the Captain Scarlet TV series. My personal favourite was the Beagle 206 Basset communications aircraft. This was a simple kit though neatly detailed with just the right amount of interior fittings to give the superdetailer a foundation upon which to show off his skills. The fit of parts was particularly good and, if anything, its greatest appeal was the fact that it was, again, an adventurous kit of an aircraft that many companies would not have touched with the proverbial barge-pole.

Already Airfix had produced one of aviation history's most famous tri-motor aircraft, the Ju 52 3/M, a machine of corrugated construction, and now, as if to partner it, series 4's kits were joined by the

Ford Tri-Motor, a much used American airliner of the 1930s. This was a most exquisite kit, its more than 100 parts fitting together beautifully to capture the lovely lines of this almost quaint machine. How popular the kit was upon its release, though, is a matter of conjecture, at least for me, but it was certainly an adventurous project for Airfix. The kit is now a much sought after item as it disappeared from the market for a lengthy spell in the late 70s-early 80s, as did another well researched and produced release of the same year, 1968.

It was the firm's first, and so far, only multi-engined World War 1 aircraft and was, of course, the giant Handley Page 0/400 bomber, perhaps series 5's most intricately detailed kit ever. I, for one, was much impressed with this kit, and indeed used to pester the shop assistants as to its arrival long before its release. The detail was truly outstanding as evidenced by over 170 parts in a dark green plastic reminiscent of RAF medium green. Everything was there in 1:72nd scale, including the aircraft's massive, twin, cylindrical fuel tanks and a full bomb load comprising several of the same weapons toted by Airfix's DH 4. The kit also included a splendid reproduction of the very angular 1000lb bomb, complete with its own decal, 'with a little hell(p) from the RAF'. The crew figures, too, deserve special mention here, for the three gunners included wore the typical long leather coats of the RFC/RAF in World War 1 and one must pause to wonder how many of these delightful renditions found their ways into other kits such as the Bristol F2b and RE 8.

Obviously, World War 1 enthusiasts snapped up this kit, even if their interests lay with air arms of other nations for here, in injection moulded form, was the ideal and only companion to the only other

One of my favourite Airfix kits of all time, the Vought Kingfisher.



World War 1 bomber kit, the early FROG kit of the Vickers Vimy.

The kit's box was another example of the talented Roy Cross's vibrant and exciting aerial clashes, for here was an 0/400 about to emerge from high cumulous cloud with its gunners defending their aircraft against a gaggle of Fokker DR 1s. The detail incorporated here was quite phenomenal, and of the many Airfix paintings this one, for me at least, came very close to being almost a photograph. Its clarity was amazing, and very bright, making it a kit which really did stand out on a shelf as being something which said 'I'm special - build me!', and there haven't been many kit paintings since, that have made that sort of impact.

The last kit to appear in 1968 that was another first for Airfix, was the swingwing F-111A, the firm's initial foray into the aspect of variable geometry wings. The kit was a Series 4 release, moulded in pale blue, and of course incorporated the swing wing mechanism as well as the separate escape module for the two man crew. This, today, is a much sought after kit, for the F-111A format disappeared for some time to re-surface, in much modified form, as an F-111E in markings and camouflage as worn by machines based today at Upper Heyford.

In a year or so the decade of the sixties would end, and with it Airfix's first 17 years of kit-production-in-earnest, though not before one or two more gems from their production line were to grace stockists' shelves all over this country and abroad. This period was the real hey-day of plastic modelling and heralded the beginning of the real expansion of the hobby world wide. We all must share a feeling of gratitude for Airfix's pioneering spirit and, for getting our hobby off the ground.

Terrence Marriot



THE 'O' GROUP

IT has been a quiet month with little new on the shelves and indeed many shops are having great difficulty obtaining stocks of current kits. Both the Tamiya and Italeri ranges are getting increasingly difficult to find. Over the last few weeks I have been trying to get the Tamiya Challenger, M-5A1 Stuart, and M-3A2 H/T, all the shops I tried had the same story. Orders had been sent to the distributor Richard Kohnstam, but had not been filled. One shop told me that at any one time up to half the current Tamiya range is out of stock at the distributors and this is causing problems with customers, so it is best to check availability before making your way to the shop.

Pegasus Models gave me some news of a new range of resin kits coming from Poland. The first kit is a TKS tankette used by the Polish army in the opening battles of World War 2. This kit has 66 parts cast in the old type of fibre glass resin used extensively by the cottage industries during the 1970's. The resin is much more brittle than current polyurethanes, but it can accept fine detail. Following the TKS is the Soviet BA-64 light armoured car, used during World War 2 and widely exported at the

The 1:35th scale Ram Mk.II hull from AFV Miniatures.

JUNE 1989

end of the war. This model is made up of 70 parts and features a detailed interior with separate hull doors which is ideal for mounting figures or adding further detail. The BA-20 Soviet light armoured car follows the same style as the BA-64 and has a total of 61 parts, including an engine and radiator assembly. Lastly there is a Wz.34 Polish light armoured car which is now available but I have not seen this as yet. All the Ledwoch kits are to 1:35 scale and come with a detailed instruction sheet printed in

English. These kits are not mass produced so you may have to add your name to the waiting list and I am sure you will not be disappointed. All four kits are priced at £19.99 inclusive of VAT from Pegasus Models, 297 Allison Street, Glasgow, G42 8HH. Or phone 041-423-0945 and ask for Rab Burns.

MB MODELS

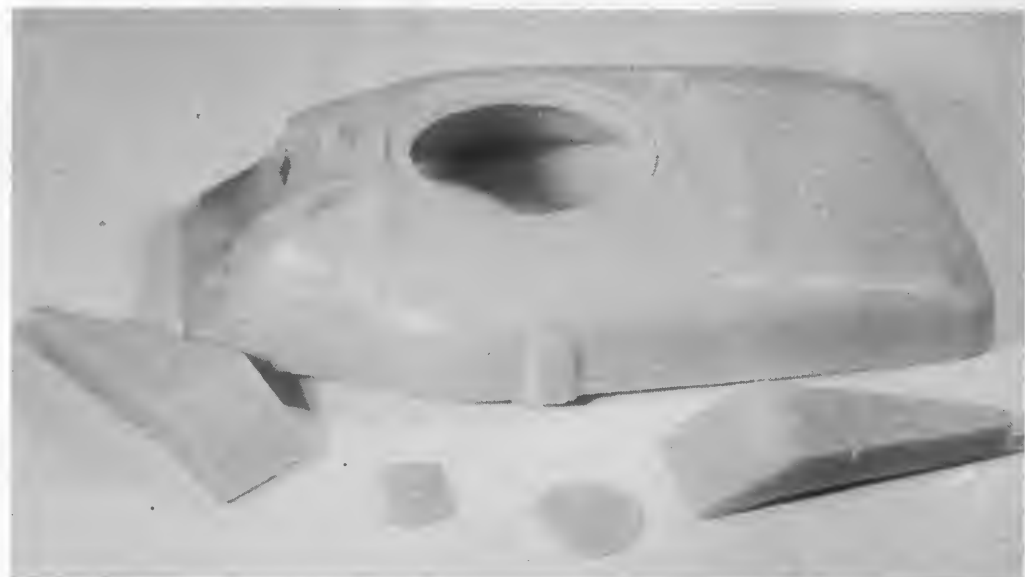
LR Models sent me one of the latest releases from MB Models, this being the Soviet IS-2 heavy

The MMS 1:72nd scale Soviet BMP 1P.

tank. The kit shares some parts with the ISU-152 which I mentioned last month, but has new upper hull and the large distinctive turret. Many people regard the IS-2 as the finest tank produced during World War 2. It was the equal of the Royal Tiger in terms of armour protection and firepower, but was some 20 tons lighter. This meant that the tank had much greater automotive performance and reliability than the touted Tiger. The MB Models kit is nicely cast in polyurethane resin with little work required to clean up the parts. The overall fit is good, except for the lower hull which needs some filler and a little surgery to obtain a better fit. The price is £39.99 inc VAT, quite reasonable for this large 1:35th scale kit.

Richard Pike tells me that he has ordered the Lindberg 1:35 T-55 MBT direct from the United States. The UK price should be around £14.99. This is very probably the most numerous tank currently in service. Built in huge numbers, the T-54/55 series replaced the T-34/85 from the mid-1950's in Soviet and Warsaw Pact armies. It was widely exported to the Third World and many are still in service or held in reserve. Richard is also trying to obtain stocks of the re-released Tamiya/MRC KV-1C and KV-2 kits. Expected soon is the MB Models IS-3 and the T-62 engine pack. For further details contact LR Models, 359 Bearwood Rd, Bearwood, Warley, W. Midlands, B66 4DB. Or phone Richard on 021-420-4332.

Chris Evans sent me some copies of the ISO pamphlets on the Ferret and Saracen armoured cars. These photo-profiles are ideal for reference when building the Ferret and



The Ledwoch 1:35th scale TKS Tankette from Pegasus Models.

Saracen kits from Dartmoor Military Models or Miniature Military Models. Chris buys and sells military books and carries a wide selection of titles, including the full range of ISO books. The Ferret and Saracen books cost £2.95 each plus £1.50 postage & handling. Chris Evans, Flat 6, Wheatley Court, 2 Jervoise Drive, Birmingham, B31 2XU.

INJECTION MOULDING

MP Models are a new range of injection moulded conversion parts in 1:35th scale, produced by Bill Miley of Finksburg USA. At the moment there are four Sherman conversions, MP.1 is an early production hull for either the M-4 or M-4A3. MP 2 is a Firefly 17pdr turret and MP 3 is the M-4A4 hull & nose. The last kit, MP 4 contains late HVSS suspension and tracks. At the moment there is no UK supplier, but both LR Models and ED Models are making enquiries.

The W. German company Puchala makes white metal kits and figures in 1:35th scale. Current models include the 3.7cm Flak 36, 157cm Searchlight with crew figures, 3.7cm Flak 43 available in single or twin barrel versions. Figures include gun crews and Fallschirmjager in various situations. This range is being imported by LR Models who should have stocks by the time



you read this.

Lunar Models produce both Sci-Fi and Armour kits in polyurethane resin to 1:35 scale. The kits are below average in terms of detail, but some interesting subjects are due for release in the next few months. First is the MLRS rocket launcher at \$89.95 and a Soviet T-35 Heavy Tank at \$119.95. Other kits due in the coming months are the T-64 MBT, IS-2, M-113/Chapparall, and the SA-6 Gainful. The address is 5713 Willowbrook Drive, Rowlett, TX 75088, U.S.A.

Revell is to re-release several military vehicle kits, most of which have appeared

some years ago under the Renwall label. The ex-Renwall kits are to 1:32 scale and include the M-41 Walker Bulldog, M-42 'Duster' and M-47 Patton. The M-35 truck is an original Revell kit to the odd-ball scale of 1:40, and included with the M-35 is a 105mm Howitzer.

ACCURATE ARMOUR

Accurate Armour have just released their kit of the Soviet PT-76 light amphibious tank and the price is £41 post free (UK & Europe). For many years the PT-76 was the standard recce tank for Soviet and War-

saw Pact forces entering service in the early 1950's. The Accurate Armour kit is of the Model 2, sometimes referred to as PT-76B, which was the main production model. In all Warsaw Pact countries, the PT-76 has been replaced by the BRM, but it is still being used by many Third World armies. Derek Hansen will be starting work on the next kit, which should be the Infantry Tank MkIII Valentine if all goes to plan. The Valentine will be produced in three variants which have not been finally decided, however they should be a MkII (or MkIV), MkIII (or MkV), and a MkIX (or MkXI). This kit is sure to be popular, as it has been high up on the 'most wanted' list for many years. For more details contact Derek Hansen on 0475-43955, or write to Accurate Armour, Unit 16, Ardgowan St Industrial Estate, Port Glasgow, PA14 5DG.

ED Models has received new stocks of the Alby SdKfz13 Adler and the SU-100 SPG conversion, both highly popular when first released. Stocks of the new injection moulded Panhard 178 armoured car are also in the shop and a review kit is in the post to me. AEF Designs have just released their version of the IS-2, which is a follow on from their IS-3 released three months ago, the price is £42 inc VAT. This company also plan to release the ISU-122 and the ISU-152 self-propelled guns. For me the most interesting of this years' releases from this company is the Soviet ASU-85 airborne tank destroyer.

Several new kits have been announced by the German

MB Models IS-2m which is available from LR Models.



From Germany, the 1:35th scale Metal Searchlight.

company Airmodel, which are sold by ED Models in the UK. The first is the 15cm PzHaub 18M Sturmiger and this will be followed by three self-propelled guns based on the Praga PzKpfw 38t chassis. These are the 15cm SiG33(Sf1) auf PzKpfw 38(t) Ausf H, and the similar Ausf M, and the Marder 111. ED Models has also received new stocks of the Azimut 8.8cm Pak 43 anti-tank gun, and some vehicle conversions are expected soon. The conversions are all on the Italeri Puma armoured car and cover the SPG variants. For information and prices contact Andrew Deeley on 021-744-7488 or write to ED Models, 64 Stratford Road, Shirley, Solihull, West Midlands, B90 3LP.

SOVEREIGN/MMM

I recently had a long chat with John Tassell about the Sovereign/MMM ranges of resin vehicle kits. The Daimler MkI and Humber MkIII armoured cars are now very close to being put into production. I can say that they are well worth the wait. John is working on a Humber MkII scout car, a vehicle which is a personal favourite of mine. The Humber MkII S/C was built to supple-

The Ledwoch BA-20 armoured car from Pegasus Models.

Humber MkII's were built, and they served well into the 1950's, being replaced by the Ferret. The master pattern is about 75 percent completed as I write this, and John says he will soon be cutting the metal for an SdKfz 11, 3 ton half track.

The MMM CG 100 and 150 kits are being re-designed to give access to the hull interior. This will make the job of mounting figures much easier and interior detailing should now be possible. The next kits in the pipeline will be the M-26 and M-46 Pershing, conversion kits for the Italeri M-47, including turret and engine deck parts. For more details write to John Tassell at 4 Hawbeck Road, Rainham, Gillingham, Kent, ME8 9TS.

John Perry's 1:35th scale kit of the Alvis Saracen 6x6 APC should be on sale in July. The Saracen was the British army's first purpose built APC, entering service during the early 1950's. It saw action in Malaya, Aden and Cyprus, and more recently in Northern Ireland. It is still in service with many Third World armies, and the RAF use them as priority aircrew transport. There is still no firm commitment on the Saladin armoured car, which shares the same chassis, though it is seriously under consideration, as is the Stalwart load carrier. Dartmoor Military Models can be contacted at Woodmanswell House, Brentor, Nr Tavistock, Devon, PL19 0NE.

I mentioned kits of the Ram MkI and MkII in 1:35th scale from a new company called Aardvark Hobbies. Last week I received a sample casting, and it would seem that the

company has changed the name to A.F.V. Miniatures. Anyway, the sample hull and side panniers look quite nice in bubble free polyurethane resin. The instruction sheet points out the Ram Variations and also gives the census numbers of each sub-type. Initially there will be four conversion kits available, Ram MkI hull, Ram MkI 2 pdr turret, Ram MkII (late) hull and the Ram MkII 6 pdr turret. A UK model shop is currently negotiating terms for the production of these models and I will keep you informed of the result.

TAMIYA

Tamiya has released the M-242 Hummer with 25mm Bushmaster cannon. The price in Japan is 1,200 Yen, or about £5.50, though the UK price should be very much higher. Though Japanese cottage industries seem to be mainly concerned with Sci-Fi models, I recently saw some pictures of the new 1:35th scale T-60A Soviet light tank from Fairy. The hull, turret and wheels are resin, hatches are vac-formed plastic and the tracks are superbly cast injection moulded individual links.

Model Kasten sent me some samples of their new tracks made in injection moulded plastic. They are for the Universal Carrier, Hotchkiss H-39, Fiat-Ansaldo M13/40, and PzIV. Future releases include T-72/T-62M and M-113A1 tracks. The prices of the new releases are 3,000 Yen each, about £12, and are available direct from Mr. Yoshio Ohwada, 5-12-69-1017 Yashio, Shinagawa-Ku, Tokyo 140, Japan. Phil Greenwood



KIT COMMENT SPECIAL



NEW VERLINDEN PRODUCTS

WITHOUT doubt, Francois Verlinden has set the pace for today's military modelling cottage industries. Without his ingenuity and imagination, resin models would probably still be geared to the small specialist armour market. Today the Verlinden empire employs 16 full-time staff and occupies a purpose built factory and warehouse complex, yet Francois still manages to devote a considerable portion of his time to his first love, modelling. It's hard to believe that it's less than a decade since the first volume of the Verlinden Way hit the bookshelves and even less since his first resin accessories became widely available to the modelling public.

On a recent trip to Belgium I

had the pleasure of spending a couple of hours with Francois and his son and came away with some of his recent releases. I also saw something of his future plans and I'm confident both military and aircraft modellers will find something to interest them.

The Vietnam era provides Francois with much of his inspiration and is also the best selling sector of his extensive range. No less than five new releases come from this period. **Good Morning Vietnam** and **Hamburger Hill** are both mini-vignettes covering different glimpses of the GI's life. The first depicts a soldier at rest, sitting surrounded by his personal gear including cassette player, just about to start a can of beans or some other such delicacy.

The other is of a GI NCO with rifle and anti-tank weapon sheltering in the lee of a mound, evidently either under fire or about to go over the top. Both models are exquisitely moulded with the finest of detail. The first consists of groundwork and soldier's legs cast as one piece with separate upper torso, arms and head. This gives you the chance to vary your model by using other compatible parts.

The second model gives less scope for variation, as only the left arm and head are separate, but this is no great loss as the set piece is perfect for the figure painter to test his skills.

On the subject of variation, the **US Platoon/Vietnam** set provides three multi-pose style figures each comprising

separate legs, torso, arms and heads, with two sets of legs having separate boots. Three extra heads, an extra pair of boots and seven items of kit are also included, bringing the parts count to no less than 31 pieces. You will recognise some of the parts from other releases, especially the heads, but this is no disadvantage and a total of three superb figures of GIs in relaxed poses can be modelled.

The other two Vietnam era releases are a conversion kit and a field accessory. The conversion is a flame thrower turret to convert the M113 and includes one-part turret casting, flame thrower barrel, MG barrel and brass wire to form a rail around the base of the turret. This last item strikes me as being a bit of a short cut



for the manufacturer and I would have preferred to have seen it in etched brass or even white metal, but you can't have everything without boosting the price. The other accessory is one of the most unusual to come out of this stable to date, namely a **US Army field refuelling set**. This comprises a cylindrical fuel container, pump set, pipe fittings and a length of tubing. Rub down transfers (including two spares) are included, as is a well thought-out instruction sheet. The pump set consists of two units, the main body of each being cast in resin and the frames being constructed from etched brass components and brass wire. It is not really an ideal subject for younger or less experienced modellers due to the mixing of mediums, but the more experienced modeller will be able to turn out a highly detailed and unusual replica of an item which as proved invaluable to tank and helicopter movements for more than two decades. Two or more kits can be combined to give a fuel replenishment facility as used by NATO forces today.

In the past, I have criticised Francois for supplying in-

sufficient supplementary information to modellers who do not have the same access to the original that he has, but the details supplied with this kit whilst not comprehensive, are more than adequate.

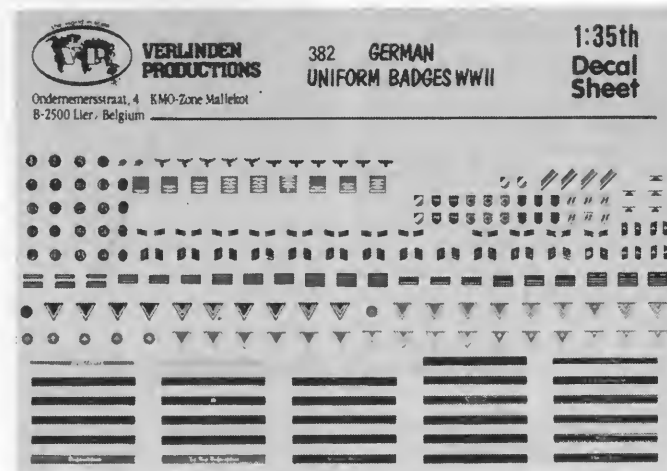
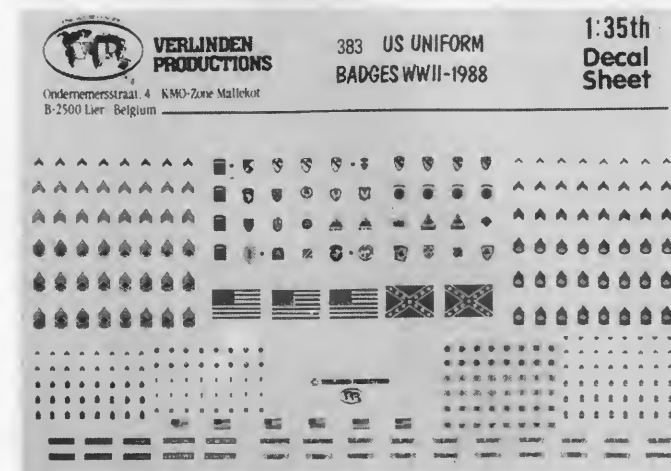
Aircraft subjects are playing an increasing part in the Verlinden range. The two latest releases are unique to this manufacturer and their diversity is a testament to Francois's originality. **Luftwaffe Airfield Carts World War 2** is



another multi-medium kit comprising a starter trolley and refuelling trailer in 1:48th scale. Both models are state-of-the-art kits in resin and etched brass with brass wire and rubber hose also supplied. The comprehensive instruction sheet supplied is as good, if not better than some of the major injection kit manufacturers and both models are good enough to stand on their own, although designed primarily as diorama accessories.

The second aircraft release, this is also to 1:48th, is the **F-16 Super Detail Set** and is meant to complement the Hasegawa F-16A. The etched brass and resin parts included allow the superdetailer to open up the nose and gun bay. When used with the forthcoming F-16 Cockpit Detail Set, this conversion should allow experienced modellers to turn out superb replicas. I cannot claim to be knowledgeable enough about the F-16 to comment on the accuracy of this kit, but it certainly looks impressive. The instructions provided with this conversion are also very well done.

The last releases are a set of **76 mm Sherman Ammunition** comprising three packing cases, three canisters, five shells and four spent cases and PSP. To the uninitiated PSP stands for pierced steel planking and is sections of metal which can be interlocked to form a roadway or runway. This material was widely used in Vietnam for reinforcing bunker systems as well. The etched brass sheet of ten planks allows a mat of roughly 3.5 x 3.0 metres to be constructed in either 1:32nd or 1:35th scales. **Bob Morrison**



VISA
Telephone: (0708) 754386 **FLYING HIGH** Telephone: (0708) 754386
137 STANLEY AVENUE, GIDEA PARK, ROMFORD, ESSEX RM2 5DB

SALE
TO CELEBRATE OUR FIRST BIRTHDAY, WE ARE GIVING THE FOLLOWING DISCOUNTS UNTIL 30 JUNE 1989.
ALTHOUGH WE ARE A MAIL ORDER COMPANY, WE ARE HAVING AN OPEN DAY ON 10 JUNE (SATURDAY).
SPECIAL DISCOUNTS!

POSTAGE
PLEASE ADD £1.65 TO ALL ORDERS UP TO £25.00. FREE OVER THIS. DECALS AND BRASS ETCHED PARTS, ADD 35p ANY AMOUNT. FREE WITH KITS.

OVERSEAS
DEDUCT 1:13th VAT FROM ALL ITEMS (NOT BOOKS). ADD 30% SEA MAIL OR 45% AIR MAIL.

ACCESS/MASTERCARD/VISA
SIMPLY WRITE OR PHONE, QUOTING CARD NUMBER, EXPIRY DATE, ADDRESS, HOME AND OVERSEAS.

BADGER
Airbrushes at reduced prices.
Micon Compressor £85.00
250.1 Basic Airbrush £11.00
350.2 Airbrush £36.00
200.3 Airbrush £56.00
2001L Airbrush £47.00
1501L FineLine £85.00
Allow ten days delivery.

FLYING HIGH CATALOGUE
SEND FOR OUR CATALOGUE 95 pence

NEW ITEMS
KP FROM CZECHOSLOVAKIA 1:72nd Sukhoi Su-7 BKL/BMK £3.75 Aero A.100 £3.75
OEZ FROM CZECHOSLOVAKIA 1:48th Sukhoi Su-7 BKL/BMK £14.95
PIONEER 2 1:72nd Beech C-45 £3.99
CONTRAIL 1:72nd vacuforms with white metal parts and decals. Blackburn Kangaroo Civil £7.75 Blackburn Kangaroo RAF £7.75 Blackburn GP Floatplane £7.75
BLUE RIDER 1:72nd Camel F.1/F.3 Conversion. Vacuumformed fuselage, white metal plus 22 brass etched parts. Decals for three aircraft £4.95
Decals BR208 German Jagdstaffeln Markings £2.20 BR209 RNAS Markings £2.20 BR210 Austro-Hungary £2.20
MAINTTRACK DECALS D724: 40 British FG.1/FGR.2 Phantoms, all schemes £2.95 D725: USN/USAF, EA-6A, A-6E, KA-6D, TA-7C, EA-7L, EF-111A, F-4D, F-4E, F-105D £2.50 D481: 1:48th es for D725 £3.50
AIRWAVES Superb brass etched detail sets, incl full cockpit Lightning F.1/F.3 £3.99 Wessex £3.99 Tornado £4.99 Sea King £4.99 Sea Harrier £3.99

TRIMASTER
Superb 1:48th scale Hi-Tech kits.
Fw 190D-9 £24.00 Fw 190D-12 £24.00 Fw 190F-8 + X4 missile £24.00 Fw 190A-8/R8 £24.00 He 162 £24.00
HINGE SETS Four lengths of stainless steel hinges that actually work. Ideal for super detailing. PC.1 (small) £5.65 PC.2 (medium) £5.65
FALCON Two new Clear Vax sets are available. £5.75 each Set 6 1:72nd WW2 USAF Fighters Set 7 1:48th WW2 USN Aircraft
SUPERSCALE Formerly Microscale. £2.95 per sheet. 72-572 Russian numbers current. Solid end outlined. 72-573 Russian stars. WW2 to current. All styles. 72-574 B-24D and B-24J, 44th, 482nd and 392nd BG. 48-332 1:48th as 72-572. 48-339 1:48th as 72-573. 48-340 1:48th as 72-574. 48-342 1:48th WW2 US insignia with red outline. 32-074 1:48th WW2 US insignia. Stars and bars.
MODELSTRIP For removing old paint from models £1.95

VERLINDEN
1:48th Hi-Tech Me 109E set. Contains: complete engine, complete interior, brass canopy frames, w/t set. £11.50
1:48th Hi-Tech F-16 set. Contains: complete radar and computer bay, open panels, gun and gun bay, 43 photo etched and 11 resin parts. £11.50
NEW 1:48th Injection Seats High detail resin casting. Supplied in packs of two at £2.65. 410: SJU for F-18 413: GRU-7A for F-14 62: Aces II for F-15/16 404: 1:48th USAF liquid oxygen and nitrogen carts. Resin kits with brass etched parts and decals. £12.50
Lock-On No.4: F-15 Eagle The most comprehensive detail yet published. £6.50

PROJECT X
1:72nd Vacuforms with white metal parts and decals. Supermarine 510 £6.75 Hawker P.1052 £6.75
AIRWAYS 1:72nd Vacuforms with white metal. BAC 1-11 300/400 Srs £16.95 Viking/Valetta £14.95
HUMA Injection moulded in 1:72nd scale with decals. Messerschmitt P.1101V-1 £7.95 Henschel Hs 132V-1 £9.95
KARO A/S 1:72nd Injection moulded with decals. FW 187 Falke £5.95
TWELVE SQUARED 1:72nd Injection moulded with decals. Bell X-1 £9.75 Northrop X-4 £10.75
AEROCLUB 1:72nd Pou du Ciel £3.75 1:72nd Slingsby Venture £4.25
Vacuumformed Canopies V078 BP Type C Turret £1.25 CO31 Javelin £0.50 CO32 Jet Provost £0.50 CO33 Lightning F.1/F.3 £0.50 CO34 Hudson £0.50

AUSSIE DECALS
Two new sets at £2.75 each. 705: High visibility current RAF roundels — large. 706: As above, small sizes.

FLYING HIGH
1:48th BAC Lightning F.6 Excellent vacuum form with a wealth of white metal parts including complete cockpit. £19.00

PHOENIX
1:72nd Vacuforms BE.2A £3.99 Otto Doppeldecker £3.99

NEW from esoteric models!



VOUGHT SB2U-1



NORTHROP BT-1

Plus postage and packing:
UK 70p, Europe 80p,
USA £2.00 by air;
per kit.

ONLY £8.00 EACH

ESOTERIC MODELS
Hangar, 3a Main Road,
East Hagbourne, Didcot,
Oxon OX11 9LJ England

MAINTRACK MODELS

79 Queens Road, Hastings, East Sussex. TN34 1RL

Telephone: 0424 437428

PHABULOUS SPECIAL OFFER!

HASEGAWA 1:48th Scale HIGH-TECH PHANTOM FGR.2

We can offer this superb kit, which contains white metal and etched detail parts and markings for the 'Alcock and Browne' transatlantic aircraft.



PLUS! — the added BONUS of our 'CLEAR-FIX' comprehensive decal sheet with markings for ALL RAF Phantom squadrons (over 30 variations to choose from). Phantom kit £29.99 plus Decals £3.50 TOTAL £33.49

SPECIAL OFFER PRICE — JUST £19.99 POST FREE IN UK!

The High-Tech Phantom FGR.2 kit may be purchased without the 'Clear-fix' decals for £16.99 (post free in UK)

TWO FOR THE PRICE OF ONE!! £29.99!

Buy two kits (without 'Clear-fix' decals) for the price normally charged for one kit.

RECENT RELEASES

AIRFIX Re-releases 1:72nd
Mirege IIIC £2.45
Westland Gazelle £1.99
AIRFIX re-releases 1:76th
Lee/Grant Tank £1.99
Metador end 5.5 in gun £1.99
Quad and 25 pdr field gun £1.99

HASEGAWA 1:72nd
MiG-29 Fulcrum (updated) £7.99
F-14A Tomcat (Wolf Pack) £10.99
F-14A Tomcat (VF-14/32) £10.99

ITALERI 1:72nd Re-releases
Nieuport 28 £1.99

REVELL 1:48th
Wessex HCC.4 Queens Flight £9.99

REVELL 1:144th
MiG-27 Flogger £1.99
Mitsubishi F-1 £1.99
DC-10-30 BA/Martinair £3.99

TRI-MASTER 1:48th High-Tech
Focke Wulf Fw 190A-8/R-8 £24.95
Focke Wulf Fw 190A-8/R-11 £24.95

TRI-MASTER Accessories
PC-1 Hinge set (small) £5.95
PC-2 Hinge set (medium) £5.95
(For making working flaps, etc.)

AEROCLUB 1:72nd Injection moulded
Pou-du-Ciel £3.75
Slingsby Venture T.2 £4.25
(Contains some vacuumformed parts)

ESOTERIC MODELS 1:72nd Vacuum
N3N-1/3 Yellow Peril £8.00

PEGASUS 1:72nd Injection
Completely re-tooled kit with decals and white metal parts
Fairley Albacore £8.95

MAINTRACK MODELS 1:48th Resin
Conversions
NEW! 48:10 BAe Harrier T.2/T.4/T.4N £10.95

POSTAGE — UK
Up to £5 £1.00
Up to £17.50 £2.00
Up to £25.00 £2.50
Over £25.00 £3.00

POSTAGE OVERSEAS (Incl Elre) —
Deduct 13% VAT element (except decals)
then add 35% to NETT price. Alternatively
at cost by Credit Card or send IRCs
for Proforma Invoice.

BARCLAYCARD/VISA; DINERS
CARD; ACCESS/MASTERCARD
accepted.

Contains resin moulded parts to enable
the Airfix Harrier GR.3 to be converted to
the early and later Harrier two-seaters, the
US Marines TAV-8A or the Royal Navy
T.4N. A clear vacuumformed canopy is
included.
AIRWAYS VACUFORM 1:48th
Gloster Javelin £9.95
Canberra B.118 £10.95

POSTAGE OVERSEAS (Incl Elre) —
Deduct 13% VAT element (except decals)
then add 35% to NETT price. Alternatively
at cost by Credit Card or send IRCs
for Proforma Invoice.

BARCLAYCARD/VISA; DINERS
CARD; ACCESS/MASTERCARD
accepted.

ERNEST BERWICK (MODELS TOYS LEISURE) LIMITED

'LANCASTER HOUSE', 55 UPPER BENEFIELD, PETERBOROUGH PE8 5AL
TELEPHONE (08325) 272 (PERSONAL CALLERS BY APPOINTMENT ONLY)

AIRMODEL 1:72nd Vacuum
He 219A-5R4/B1 Conv. £3.10
He 280V2 V4-Vp. £6.55
Me 309 V1/V4. £5.35
FW 44 Steiglitz £4.35
Ju 388K-1/L1 Conv. £4.35
He 280 V1-V5. £6.55
Lippisch DM-1. £4.35
He 45. £7.10
HFB 320. £7.10
Yak 1000. £5.35
Fw 191. £10.95
F8U3 Crusader 3. £9.75
XF-92A. £7.10
Arsenal VG.33C1. £7.10
Me 261. £10.95
LeGG 3. £5.35
Bristol Freighter Mk.31
Conversion £3.10
Yak-23/23UTI. £5.35
Whirlwind HAR.10 Conv. £4.35
Teledyne Ryan 235R Tern. £6.35
Nord Griffin 11. £8.00
Ryan X-13 Vartijet. £7.10
He 343. £9.75
IMAM Ro.44. £7.10
Me 328A/B. £5.35
Ju 290A-2bis A9. £19.40
Vampire T.11/NF.10 Conv. £3.10
SO 9050 Trident 11. £7.10
Northrop X-4 Bentam. £7.10
Antonov An-2 Sp. Offer. £7.10
XFY-1 Pogo. £5.35
H-21 Workhorse. £4.35
Vickers Valetta Conv. £7.10
AF 2 WS Guardian. £5.35
Ryan Fireball FR-1. £5.35
Hunting Pembroke. £8.00
He 119. £5.35
XP-47H Thunderbolt Conv. £3.10
XF-95 Goblin. £3.10
Ju 388 V4 (J1). £5.35
Arado Ar 396. £5.35
He P1107 Julia/Romeo. £5.35
Northrop F-15A Conv. £3.10
Fw F-19A Ente. £5.35
Su-25 Frogfoot Sp. Offer. £9.15
Crusader 8 (to clear). £1.25
Bu 131 Jungmann (to clear). £4.35

AIRMODEL 1:72nd Epoxy
X-13 Launch platform. £13.85
Mikoyan 1-270. £8.70
Polikarpov I-17. £8.70
Breguet Br 19. £14.25
DFS Habicht. £9.45
Kawasaki Ki-60. £10.45
Me 263V1. £10.45
He 280. £11.45
B14Y-1 Glen. £10.45
Luftwaffe Wapson Set 1. £8.75
Luftwaffe Wapson Set 2. £8.75
Soviet Wapson Set 1. £8.75
Soviet Wapson Set 2. £8.75

AIRMODEL 1:72nd Injection
plus decals
Fw 190V18/U1. £8.70
REVELL (EX-FROG) 1:72nd
Me 110. £2.95
Me 410A1/V4. £2.95
He 115. £3.50
Dornier Do 17Z2. £3.50

REVELL 1:32nd
Beaufighter. £13.95
Mosquito. £13.95
Huey Cobra. £9.50
F-16A. £12.50

RAREPLANE 1:72nd
Vacuform
Curtiss Wright CW-21. £2.50
Supermarine Spitfire. £3.00
Breda Ba 65. £2.50
Curtiss A-12 Shrike. £2.95
Northrop A-17/A-17A
Nomad. £2.95
Beech C-45 Expeditor. £2.95
FJ-1B Fury. £2.95
Grumman F3F-1/2. £3.50
Meteor Nightfighter. £3.95
Goblin G-23. £3.00
PV-2 Harpoon. £7.95
AT-12 Guardsman. £3.95
XF5F-1 Skyrocket. £4.95
Nekeja Army Type 91. £2.50
Lancer P-43A. £2.50

NICHIMO 1:48th Aircraft
Sonia. £5.35
Oscar. £5.35
Spruce. £5.35
Aerosubaro (to clear). £1.50
Cessna Seaplane (to clear). £1.50

OTAKI 1:48th Aircraft
Zeke. £5.49
Oscar (Limited). £6.49
George. £5.49
Willow Trainer. £5.49
Tony. £5.49
Frank (Limited). £7.49
Corsair F4U1A. £5.99

AIRFIX 1:48th Aircraft
H. Hurricane (Limited). £6.95
Spitfire Vb (Limited). £6.95
Sea Harrier. £5.50
Mosquito (Limited). £9.50
Prowler. £8.95

AMT 1:48th Aircraft
Corsair F4U. £3.95

AEROCLUB 1:48th Aircraft
Sopwith Pup (vacuform). £5.25
Gamecock (vacuform). £6.95
DH Chipmunk (vacuform). £5.95
Folland Gnat (vacuform). £5.25

ESCI 1:48th Aircraft
Mirege F1C. £6.95
Crusader F8. £7.95
Hornet F-18. £6.95
Thunderbird F-100 S/O. £4.50
Blue Angels A4 S/O. £5.00
Crique MS/500/502 S/O. £5.00
Mirege F.1 — 200. £6.95

FUJIMI 1:48th Aircraft
Mirege 111C. £5.25
Mirege 111R. £4.75
Fw 190A-6. £5.65
Alouette 111. £4.75
Aichi Type 99 111 Val. £6.35
F-15 Eagle. £9.99
SA.341D Gazelle. £4.75
MBB Bo.105 PAH/M. £4.75

FUJIMI 1:76th Military
Each 1.75
Tiger II
KV-11
Jagdtiger
Hetzer
Sherman M4
Matilda
Kubelwagen
Valentine
Elefant
T34/76
Chia Ha 97
Advanced Ch Ha
PZPKF 1
PZPKF 1/4
88 mm Flak
US Infantry
Tents etc
Pillbox etc
German Infantry
British Infantry

NOVO 1:72nd Aircraft
Sea Hawk F.Mk.1. £3.50
Kittyhawk P-40E 1A. £2.50
Westland Lynx. £3.50
Harrier Mk.1. £3.50
Twin Mustang F-82 F/G. £3.50

PIONEER 1:72nd Aircraft
Yak-15. £1.95
FW Ta 154. £3.25
Mirage 3EA/Dagger. £3.25

PM 1:72nd Aircraft
F-5A Freedom Fighter. £2.75
Mirage III. £2.75

NITTO 1:76th Military
Each 1.75
Panther G S/O
Jagpanther
Panzer Aus M/N
Kubelwagen
Schwimmwagen
Checkpoint/Bridge
Panzer 1
Panzer 11
M12 GMC King Kong
M30 Cargo
K. Tiger Henschel Turret
Jagdtiger

HASEGAWA 1:72nd Military
Leopold Railgun. £14.99
Karl 60 mm Rail Carrier. £12.00
Each 1.75
US Soldiers
Checkpoint
Mercedes G4
Churchill Mk.I
Humber Mk.II
Daimler Mk.II
155 mm M2
Panther G

FROG (ORIGINAL) 1:72nd
Aircraft
Mitsubishi Zero. £3.50
Westland Lynx. £4.50
P-47D Thunderbolt. £4.00
Ryan Spirit of St Louis
(Bagged + Inst). £1.75
Westland PV-6 Wallace
(Bagged + Inst). £1.75

NOVO 1:72nd Aircraft
Sea Hawk F.Mk.1. £3.50
Kittyhawk P-40E 1A. £2.50
Westland Lynx. £3.50
Harrier Mk.1. £3.50
Twin Mustang F-82 F/G. £3.50

PIONEER 1:72nd Aircraft
Yak-15. £1.95
FW Ta 154. £3.25
Mirage 3EA/Dagger. £3.25

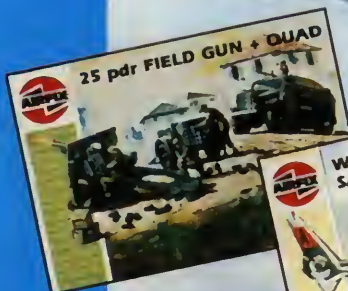
PM 1:72nd Aircraft
F-5A Freedom Fighter. £2.75
Mirage III. £2.75

NITTO 1:76th Military
Each 1.75
Panther G S/O
Jagpanther
Panzer Aus M/N
Kubelwagen
Schwimmwagen
Checkpoint/Bridge
Panzer 1
Panzer 11
M12 GMC King Kong
M30 Cargo
K. Tiger Henschel Turret
Jagdtiger

HASEGAWA 1:72nd Military
Leopold Railgun. £14.99
Karl 60 mm Rail Carrier. £12.00
Each 1.75
US Soldiers
Checkpoint
Mercedes G4
Churchill Mk.I
Humber Mk.II
Daimler Mk.II
155 mm M2
Panther G



1989 RELEASES



Humbrol Ltd., Marfleet,
Hull, North Humberside
HU9 5NE England.
Telephone (0482) 701191
Telex (0482) 712908
(GROUP 3)
Telex 592534

A HUMBROL PRODUCT

WWII AIRCRAFT OF THE ACES (1:72) Special Edition

- 02087 Grumman F6F Helcat
- 02088 Lockheed P-38 Lightning
- 02089 North American P-51D Mustang
- 02090 Vought F4U Corsair

MODERN AIRLINERS (1:144) Special Edition

- 06180 McDonnell-Douglas DC10
- 06181 BAC Aérospatiale Concorde

WARSHIPS (1:72)

- 05280 Vosper Motor Torpedo Boat

MILITARY AIRCRAFT (1:72)

- 01052 Hawker Demon
- 01059 Westland Aérospatiale SA 341 Gazelle
- 01068 MBB Bo 105C
- 02012 Dassault Mirage III C
- 02042 Hawker Hurricane Mk I/II
- 02057 North American Harvard
- 03019 De Havilland Mosquito Mk II/VI/XVIII
- 03049 BAC Jet Provost TS/Strikemaster
- 03051 Boeing Vertol Sea Knight
- 03055 Hawker Siddeley Buccaneer S.2B
- 03058 Kamov Ka 25B Hormone
- 04035 Panavia Tornado F3
- 04103 Hawker Fury Biplane (1:48)
- 06012 Fairchild A10 Thunderbolt II + Maverick missiles
- 12002 Messerschmitt Bf109E (1:24)

MILITARY VEHICLES (HO/OO)

- 01305 25 pdr Field Gun and Quad
- 01314 Matador and 5.5 in gun
- 01317 Lee/Grant Tank

HISTORIC CARS (1:32)

- 02406 Aston Martin DB5
- 02415 Jaguar 'E' Type
- 02420 MGB

DINOSAURS

- 03800 Tyrannosaurus Rex
- 03801 Triceratops
- 03803 Stegosaurus
- 03805 Dimetrodon

Scale of kits shown in brackets.